89 Human Secreted Proteins

This application is a continuation-in-part of International Application No. PCT/US02/25107, filed Aug 8, 2002, which claims benefit under 35 U.S.C. §119(e) of U.S. Provisional Application No. 60/311,085, filed Aug 10, 2001 and of U.S. Provisional Application No. 60/325,209, filed Sept 28, 2001; this application is also a continuation-in-part of International Application No. PCT/US02/33985, filed Oct 24, 2002, which claims benefit under 35 U.S.C. §119(e) of U.S. Provisional Application No. 60/330,629, filed Oct 26, 2001; this application is also a continuation-in-part of International Application No. PCT/US02/35606, filed Nov 6, 2002, which claims benefit under 35 U.S.C. §119(e) of U.S. Provisional Application No.60/331,046, filed Nov 7, 2001; this application is also a continuation-in-part of International Application No. PCT/US03/04819, filed Feb 20, 2003, which claims benefit under 35 U.S.C. §119(e) of U.S. Provisional Application No. 60/358,554, filed Feb 22, 2002; this application is also a continuation-in-part of International Application No. PCT/US03/04818, filed Feb 20, 2003, which claims benefit under 35 U.S.C. §119(e) of U.S. Provisional Application No. 60/358,714, filed Feb 25, 2002, each of the above-identified applications are herein incorporated by reference in their entireties.

Field of the Invention

The present invention relates to human secreted proteins/polypeptides, and isolated nucleic acid molecules encoding said proteins/polypeptides, useful for detecting, preventing, diagnosing, prognosticating, treating, and/or ameliorating diseases and disorders related to said proteins/polypeptides (relatedness may be by direct or indirect association, by cause, by consequence, or by effect on said diseases and disorders). Antibodies that bind these polypeptides are also encompassed by the present invention. Also encompassed by the invention are vectors, host cells, and recombinant and synthetic methods for producing said polynucleotides, polypeptides, and/or antibodies. The invention further encompasses screening methods for identifying agonists and antagonists of polynucleotides and polypeptides of the invention. The present invention further encompasses methods and compositions for inhibiting or enhancing the production and function of the polypeptides of the present invention.

Background of the Invention

Unlike bacteria, which exist as a single compartment surrounded by a membrane, human cells and other eukaryotes are subdivided by membranes into many functionally distinct compartments. Each membrane-bounded compartment, or organelle, contains different proteins essential for the function of the organelle. The cell uses "sorting signals," which are amino acid motifs located within the protein, to target proteins to particular cellular organelles.

One type of sorting signal, called a signal sequence, a signal peptide, or a leader sequence, directs a class of proteins to an organelle called the endoplasmic reticulum (ER). The ER separates the membrane-bounded proteins from all other types of proteins. Once localized to the ER, both groups of proteins can be further directed to another organelle called the Golgi apparatus. Here, the Golgi distributes the proteins to vesicles, including secretory vesicles, the cell membrane, lysosomes, and the other organelles.

Proteins targeted to the ER by a signal sequence can be released into the extracellular space as a secreted protein. For example, vesicles containing secreted proteins can fuse with the cell membrane and release their contents into the extracellular space - a process called exocytosis. Exocytosis can occur constitutively or after receipt of a triggering signal. In the latter case, the proteins are stored in secretory vesicles (or secretory granules) until exocytosis is triggered. Similarly, proteins residing on the cell membrane can also be secreted into the extracellular space by proteolytic cleavage of a "linker" holding the protein to the membrane.

Thus there exists a clear need for identifying and using novel secreted polynucleotides and polypeptides. Identification and sequencing of human genes is a major goal of modern scientific research. For example, by identifying genes and determining their sequences, scientists have been able to make large quantities of valuable human "gene products." These include human insulin, interferon, Factor VIII, tumor necrosis factor, human growth hormone, tissue plasminogen activator, and numerous other compounds. Additionally, knowledge of gene sequences can provide the key to treatment or cure of genetic diseases (such as muscular dystrophy and cystic fibrosis).

Over the past few decades, an increasing percentage of the population has become diabetic. Diabetes mellitus is categorized into two types: Type I, known as Insulin-Dependent Diabetes Mellitus (IDDM), or Type II, known as Non-Insulin-Dependent Diabetes

Mellitus (NIDDM). IDDM is an autoimmune disorder in which the insulin-secreting pancreatic beta cells of the islets of Langerhans are destroyed. In these individuals, recombinant insulin therapy is employed to maintain glucose homeostasis and normal energy metabolism. NIDDM, on the other hand, is a polygenic disorder with no one gene responsible for the progression of the disease.

In NIDDM, insulin resistance eventually leads to the abolishment of insulin secretion resulting in insulin deficiency. Insulin resistance, at least in part, ensues from a block at the level of glucose uptake and phosphorylation in humans. Diabetics demonstrate a decrease in expression in adipose tissue of insulin-receptor substrate 1 ("IRS1") (Carvalho *et al.*, FASEB J 13(15):2173-8 (1999)), glucose transporter 4 ("GLUT4") (Garvey *et al.*, Diabetes 41(4):465-75 (1992)), and the novel abundant protein M gene transcript 1 ("apM1") (Statnick *et al.*, Int J Exp Diabetes 1(2): 81-8 (2000)), as well as other as of yet unidentified factors. Insulin deficiency in NIDDM leads to failure of normal pancreatic beta-cell function and eventually to pancreatic-beta cell death.

Insulin affects fat, muscle, and liver. Insulin is the major regulator of energy metabolism. Malfunctioning of any step(s) in insulin secretion and/or action can lead to many disorders, including for example the dysregulation of oxygen utilization, adipogenesis, glycogenesis, lipogenesis, glucose uptake, protein synthesis, thermogenesis, and maintenance of the basal metabolic rate. This malfunctioning results in diseases and/or disorders that include, but are not limited to, hyperinsulinemia, insulin resistance, insulin deficiency, hyperglycemia, hyperlipidemia, hyperketonemia, and diabetes.

Numerous debilitating diabetes-related secondary effects include, but are not limited to, obesity, forms of blindness (cataracts and diabetic retinopathy), limb amputations, kidney failure, fatty liver, coronary artery disease, and neuropathy.

Some of the current drugs used to treat insulin resistance and/or diabetes (*e.g.*, insulin secretagogues – sulfonylurea, insulin sensitizers – thiazolidenediones and metformin, and alpha-glucosidase and lipase inhibitors) are inadequate due to the dosage amounts and frequency with which they have to be administered as a result of poor pharmacokinetic properties, the lack of effective control over blood sugar levels, and potential side effects, among other reasons. Diabetes Therapeutic proteins in their native state or when recombinantly produced exhibit a rapid *in vivo* clearance. Typically, significant amounts of therapeutics are required to be effective during therapy. In addition, small molecules smaller than the 20 kDa range can be readily filtered through the renal tubules (glomerulus) leading

to dose-dependent nephrotoxicity. Therefore, there is a need for improvement in treatment (*e.g.*, a need for prolonging the effects of therapeutics of diabetes and/or diabetes related conditions).

Summary of the Invention

The present invention relates to human secreted proteins/polypeptides, and isolated nucleic acid molecules encoding said proteins/polypeptides, useful for detecting, preventing, diagnosing, prognosticating, treating, and/or ameliorating diseases and disorders related to said proteins/polypeptides (relatedness may be by direct or indirect association, or by cause, consequence, or effect on said diseases and disorders). Antibodies that bind these polypeptides are also encompassed by the present invention. Also encompassed by the invention are vectors, host cells, and recombinant and synthetic methods for producing said polynucleotides, polypeptides, and/or antibodies. The invention further encompasses screening methods for identifying agonists and antagonists of polynucleotides and polypeptides of the invention. The present invention further encompasses methods and compositions for inhibiting or enhancing the production and function of the polypeptides of the present invention.

Detailed Description:

Polynucleotides and Polypeptides of the Invention

FEATURES OF PROTEIN ENCODED BY GENE NO: 1

This gene is expressed primarily in placenta and to a lesser extent in skeletal muscle, pancreas, brain, and liver.

Therefore, polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes (for example, type II diabetes). Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the endocrine system, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded

tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for detection, prevention, and/or treatment of diabetes (for example, type II diabetes), liver cancer, muscular dystrophy, and pancreatic cancer.

FEATURES OF PROTEIN ENCODED BY GENE NO: 2

This gene is expressed primarily in the liver.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes (for example, type II diabetes) and liver cancer. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the digestive system, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for detection, prevention, and/or treatment of diabetes (for example, type II diabetes) and liver disorders (for, example hepatic cancer.

FEATURES OF PROTEIN ENCODED BY GENE NO: 3

This gene is expressed primarily in skelatal muscle and kidney.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabeetes (for example, type II diabetes), muscular dystrophy and kidney cancer. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes

for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the endocrine system, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for useful for detection, prevention, and/or treatment of diabetes (for example, type II diabetes), muscular dystrophy, and kidney cancer.

FEATURES OF PROTEIN ENCODED BY GENE NO: 4

The translation product of this gene shares sequence homology with Tex261, a gene related but distinct from steroidogenic acute regulatory (StAR) gene, which is regulated during the development of germ cells.

This gene is expressed primarily in brain, adipocytes, reproductive and immune tissues and to a lesser extent in gastrointestinal tissue.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: disorders of the immune system, cancer, neurological, and gastrointestinal disorders. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the immune and reproductive system, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., immune, cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution and homology to Tex261, a gene regulated during the development of germ cells, indicates that polynucleotides and polypeptides corresponding to this gene are useful for detection, prevention, and/or treatment of disorders such as diabetes and disorders of the immune and reproductive system.

FEATURES OF PROTEIN ENCODED BY GENE NO: 5

This gene is expressed primarily in diabetic skeletal muscle.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: digestive, endocrine, and metabolic disorders. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the endocrine and muscular systems, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for detection, prevention, and/or treatment of diabetes (for example, types I and II diabetes), obesity, eating disorders including bulimia and anorexia, and muscular disorders.

FEATURES OF PROTEIN ENCODED BY GENE NO: 6

The translation product of this gene shares sequence homology with AX083426.

This gene is expressed primarily in digestive system tissues and to a lesser extent in reproductive system, immune/hematopoietic system white adipose tissue and adipose tissue.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: digestive disorders including colon cancer, immune diseases, diabetes, reproductive disorders. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the digestive, immune, musculoskeletal, adipose, reproductive, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid)

or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for detection, prevention, and/or treatment of diabetes, digestive disorders, immune disases including autoimmune disorders, inflammatory diseases, and cancer.

FEATURES OF PROTEIN ENCODED BY GENE NO: 7

This gene is expressed primarily in diabetic Skeletal Muscle.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to diabetes. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the muscle, adipose tissues, and liver, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution primarily in diabetic skeletal muscles indicates that polynucleotides and polypeptides corresponding to this gene are useful for detection, prevention, and/or treatment of type I and type II diabetes and diabetic-induced illness.

FEATURES OF PROTEIN ENCODED BY GENE NO: 8

This gene is expressed primarily in the pineal gland and the brain and to a lesser extent in skeletal muscle.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes (for example, type II diabetes). Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells,

particularly of the central nervous system and the muscular system, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for detection, prevention, and/or treatment of type II diabetes, muscular dystrophy, brain tumor, and circadian rythms.

FEATURES OF PROTEIN ENCODED BY GENE NO: 9

This gene is expressed primarily in Osteoblasts and bone tissues of normal and cancer samples and to a lesser extent in endometrial stromal cells, Hodgkin's Lymphoma, and Pre-Differentiated Adipocytes.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: bone cancers, Hodgkin's Lymphoma, and diabetes. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the bone, immune and adipose tissues, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for detection, prevention, and/or treatment of bone cancer and related disorders including osteosarcoma, osteoclastoma, chondrosarcoma, and Hodgekins's lymphoma, and diabetes (such as type I and type II diabetes).

FEATURES OF PROTEIN ENCODED BY GENE NO: 10

The translation product of this gene shares sequence homology with human calmitine, a mitochondrial calcium binding protein.

This gene is expressed primarily in skeletal muscles and to a lesser extent in the heart.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: type II diabetes and muscle dystrophy. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the muscular system, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution and homology to human calmitine, a mitochondrial calcium binding protein, indicates that polynucleotides and polypeptides corresponding to this gene are useful for detection, prevention, and/or treatment of type II diabetes and muscular dystrophy.

FEATURES OF PROTEIN ENCODED BY GENE NO: 11

This gene is expressed primarily in muscle, diabetic liver, adipose and immune cell types and to a lesser extent in most cell types.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: obesity and diabetes. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the immune system and endocrine systems, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for detection, prevention, and/or treatment of obesity, diabetes, and immune

disorders.

FEATURES OF PROTEIN ENCODED BY GENE NO: 12

This gene is expressed primarily in diabetic skeletal muscle and in dendritic cells.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes, obesity and immune disorders. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the digestive and immune systems expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for detection, prevention, and/or treatment of types I and II diabetes, obesity, and immune disorders such as arthritis, allergy, asthma, lupus, immunodeficiencies and leukemia.

FEATURES OF PROTEIN ENCODED BY GENE NO: 13

The translation product of this gene shares sequence homology with murine C-type lectin which is thought to be important in pathogen recognition and cell-cell interaction in innate immune modulation.

This gene is expressed primarily in Diabetic Liver.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes, sepsis syndrome and other bacterial, fungi, or viral infections, immune diseases, and liver diseases. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the liver, diabetic tissues including adipose and muscle, and immune system, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g.,

cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution and homology to C-type lectin indicates that polynucleotides and polypeptides corresponding to this gene are useful for detection, prevention, and/or treatment of diabetes (for example, type I and type II diabetes) and related conditions, diseases related to pathogen recognition including microbial infection and sepsis, immune disases including autoimmune disorders, inflammatory diseases, and cancer.

FEATURES OF PROTEIN ENCODED BY GENE NO: 14

In a specific embodiment, polypeptides of the invention, comprise or alternatively consist of, the following amino acid sequence:

MKLWVSALLMAWFGVLSCVQAEFFTSIGHMTDLIYAEKELVQSLKEYILVEEAKLS
KIKSWANKMEALTSKSAADAEGYLAHPVNAYKLVKRLNTDWPALEDLVLQDSAAG
FIANLSVQRQFFPTDEDEIGAAKALMRLQDTYRLDPGTISRGELPGTKYQAMLSVDD
CFGMGRSAYNEGDYYHTVLWMEQVLKQLDAGEEATTTKSQVLDYLSYAVFQLGD
LHRALELTRRLLSLDPSHERAGGNLRYFEQLLEEEREKTLTNQTEAELATPEGIYERP
VDYLPERDVYESLCRGEGVKLTPRRQKRLFCRYHHGNRAPQLLIAPFKEEDEWDSPH
IVRYYDVMSDEEIERIKEIAKPKLARATVRDPKTGVLTVASYRVSKSSWLEEDDDPV
VARVNRRMQHITGLTVKTAELLQVANYGVGGQYEPHFDFSRNDERDTFKHLGTGN
RVATFLNYMSDVEAGGATVFPDLGAAIWPKKGTAVFWYNLLRSGEGDYRTRHAAC
PVLVGCKWVSNKWFHERGQEFLRPCGSTEVD (SEQ ID NO:). Polynucleotides encoding these polypeptides are also encompassed by the invention as are antibodies that bind one or more of these polypeptides. Moreover, fragments and variants of these polypeptides (such as, for example, fragments as described herein, polypeptides at least 80%, 85%, 90%, 95%, 96%, 97%, 98%, or 99% identical to these polypeptides and polypeptides encoded by the polynucleotide which hybridizes, under stringent conditions, to the polynucleotide encoding these polypeptides , or the complement there of are encompassed by the invention. Antibodies that bind polypeptides of the invention are also encompassed by the invention. Polynucleotides encoding these polypeptides are also encompassed by the invention.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for

diagnosis of diseases and conditions which include but are not limited to: disorders in digestive, reproductive, immune/hematopoietic, neural/sensory, musculoskeletal, excretory, endocrine, cardiovascular, connective/epithelial, and respiratory systems. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells and/or those tissues indicated in Table 1B and Table 4 corresponding to this gene, particularly of the digestive, reproductive, immune/hematopoietic, neural/sensory systems, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for detection, prevention, and/or treatment of diabetes (for example, types I and II diabetes), obesity, eating disorders including bulimia and anorexia, and muscular disorders. Elevated levels of expression in the prostate indicate a role in modulation of tumor progression.

FEATURES OF PROTEIN ENCODED BY GENE NO: 15

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: disorders in digestive, reproductive, immune/hematopoietic, neural/sensory, musculoskeletal, excretory, endocrine, cardiovascular, connective/epithelial, and respiratory systems. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells and/or those tissues indicated in Table 1B and Table 4 corresponding to this gene, particularly of the digestive, reproductive, immune/hematopoietic, neural/sensory systems, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder,

relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for detection, prevention, and/or treatment of diabetes (for example, types I and II diabetes), obesity, eating disorders including bulimia and anorexia, and muscular disorders. Elevated levels of expression in the prostate indicate a role in modulation of tumor progression.

FEATURES OF PROTEIN ENCODED BY GENE NO: 16

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: disorders in digestive, reproductive, immune/hematopoietic, neural/sensory, musculoskeletal, excretory, endocrine, cardiovascular, connective/epithelial, and respiratory systems. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells and/or those tissues indicated in Table 1B and Table 4 corresponding to this gene, particularly of the digestive, reproductive, immune/hematopoietic, neural/sensory systems, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for detection, prevention, and/or treatment of diabetes (for example, types I and II diabetes), obesity, eating disorders including bulimia and anorexia, and muscular disorders. Elevated levels of expression in the prostate indicate a role in modulation of tumor progression.

FEATURES OF PROTEIN ENCODED BY GENE NO: 17

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: disorders in digestive, reproductive, immune/hematopoietic, neural/sensory, musculoskeletal, excretory,

endocrine, cardiovascular, connective/epithelial, and respiratory systems. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells and/or those tissues indicated in Table 1B and Table 4 corresponding to this gene, particularly of the digestive, reproductive, immune/hematopoietic, neural/sensory systems, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for detection, prevention, and/or treatment of diabetes (for example, types I and II diabetes), obesity, eating disorders including bulimia and anorexia, and muscular disorders. Elevated levels of expression in the prostate indicate a role in modulation of tumor progression.

FEATURES OF PROTEIN ENCODED BY GENE NO: 18

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: disorders in digestive, reproductive, immune/hematopoietic, neural/sensory, musculoskeletal, excretory, endocrine, cardiovascular, connective/epithelial, and respiratory systems. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells and/or those tissues indicated in Table 1B and Table 4 corresponding to this gene, particularly of the digestive, reproductive, immune/hematopoietic, neural/sensory systems, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for detection, prevention, and/or treatment of diabetes (for example, types I and II diabetes), obesity, eating disorders including bulimia and anorexia, and muscular disorders. Elevated levels of expression in the prostate indicate a role in modulation of tumor progression.

FEATURES OF PROTEIN ENCODED BY GENE NO: 19

This gene is expressed primarily in immune/hematopoietic, reproductive, excretory tissues, and to a lesser extent in digestive, neural/sensory, musculoskeletal, and respiratory tissues.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: disorders in immune/hematopoietic, reproductive, excretory, digestive, neural/sensory, musculoskeletal, and respiratory systems. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells and/or those tissues indicated in Table 1B and Table 4 corresponding to this gene, particularly of the immune/hematopoietic, reproductive, excretory systems, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for detection, prevention, and/or treatment of diabetes (for example, types I and II diabetes), obesity, eating disorders including bulimia and anorexia, and muscular disorders. Elevated levels of expression in the prostate indicate a role in modulation of tumor progression.

In addition, the protein product of this clone is useful for the diagnosis and treatment of a variety of immune system disorders. Representative uses are described in the "Immune Activity" and "Infectious Disease" sections below, in Example 11, 13, 14, 16, 18, 19, 20, and 27, and elsewhere herein. Briefly, the expression of this gene product indicates a role in regulating the proliferation; survival; differentiation; and/or activation of hematopoietic cell

lineages, including blood stem cells. This gene product is involved in the regulation of cytokine production, antigen presentation, or other processes suggesting a usefulness in the treatment of cancer (e.g. by boosting immune responses). Since the gene is expressed in cells of lymphoid origin, the natural gene product is involved in immune functions. Therefore it is also useful as an agent for immunological disorders including arthritis, asthma, immunodeficiency diseases such as AIDS, leukemia, rheumatoid arthritis, granulomatous disease, inflammatory bowel disease, sepsis, acne, neutropenia, neutrophilia, psoriasis, hypersensitivities, such as T-cell mediated cytotoxicity; immune reactions to transplanted organs and tissues, such as host-versus-graft and graft-versus-host diseases, or autoimmunity disorders, such as autoimmune infertility, lense tissue injury, demyelination, systemic lupus erythematosis, drug induced hemolytic anemia, rheumatoid arthritis, Sjogren's disease, and scleroderma. Moreover, the protein may represent a secreted factor that influences the differentiation or behavior of other blood cells, or that recruits hematopoietic cells to sites of injury. Thus, this gene product is thought to be useful in the expansion of stem cells and committed progenitors of various blood lineages, and in the differentiation and/or proliferation of various cell types.

FEATURES OF PROTEIN ENCODED BY GENE NO: 20

In specific embodiments, polypeptides of the invention comprise, or alternatively consists of, an amino acid sequence selected from the group: MQYLYFQGAALSACSPCLGLFFPSCFPFRVPSLISLVSAAHRPAHQSVQILS VWFLASSVEGALSRILTLWGGGLGTGGNLMIQRFPQEECLEGSVPGQWQNLSSVLLV LISSVSIKFRSLF (SEQ ID NO: 59). Moreover, fragments and variants of these polypeptides (such as, for example, fragments as described herein, polypeptides at least 80%, 85%, 90%, 95%, 96%, 97%, 98%, or 99% identical to these polypeptides and polypeptides encoded by nucleic acids which hybridize, under stringent conditions, to the polynucleotide encoding these polypeptides, or the complement thereof are encompassed by the invention. Polynucleotides encoding these polypeptides are also encompassed by the inventions.

This gene is expressed primarily in skeletal muscle tissue.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a

number of disorders of the above tissues or cells and/or those tissues indicated in Table 1B and Table 4 corresponding to this gene, particularly of the musculoskeletal and endocrine, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for detection, prevention, and/or treatment of diabetes (for example, types I and II diabetes), obesity, eating disorders including bulimia and anorexia, and muscular disorders. Elevated levels of expression in the prostate indicate a role in modulation of tumor progression.

In addition, the protein product of this clone is useful for the diagnosis and treatment of a variety of immune system disorders. Representative uses are described in the "Immune Activity" and "Infectious Disease" sections below, in Example 11, 13, 14, 16, 18, 19, 20, and 27, and elsewhere herein. Briefly, the expression of this gene product indicates a role in regulating the proliferation; survival; differentiation; and/or activation of hematopoietic cell lineages, including blood stem cells. This gene product is involved in the regulation of cytokine production, antigen presentation, or other processes suggesting a usefulness in the treatment of cancer (e.g. by boosting immune responses). Since the gene is expressed in cells of lymphoid origin, the natural gene product is involved in immune functions. Therefore it is also useful as an agent for immunological disorders including arthritis, asthma, immunodeficiency diseases such as AIDS, leukemia, rheumatoid arthritis, granulomatous disease, inflammatory bowel disease, sepsis, acne, neutropenia, neutrophilia, psoriasis, hypersensitivities, such as T-cell mediated cytotoxicity; immune reactions to transplanted organs and tissues, such as host-versus-graft and graft-versus-host diseases, or autoimmunity disorders, such as autoimmune infertility, lense tissue injury, demyelination, systemic lupus erythematosis, drug induced hemolytic anemia, rheumatoid arthritis, Sjogren's disease, and scleroderma. Moreover, the protein may represent a secreted factor that influences the differentiation or behavior of other blood cells, or that recruits hematopoietic cells to sites of injury. Thus, this gene product is thought to be useful in the expansion of stem cells and committed progenitors of various blood lineages, and in the differentiation and/or proliferation of various cell types.

FEATURES OF PROTEIN ENCODED BY GENE NO: 21

In specific embodiments, polypeptides of the invention comprise, or alternatively consists of, the following amino acid sequence:

MPGIVSDRRGQRKXRSPXALPLWSWRSSTGDKTRCFQGGSRAHQVIRIIAQEETWQP DGDATWGLRGXAFQAEGTAAAKILLVPVLGVQRWQGVLGPYMLLVGTMLSGLVS NSWPQAILLPQPPKVLGL (SEQ ID NO:60). Moreover, fragments and variants of these polypeptides (such as, for example, fragments as described herein, polypeptides at least 80%, 85%, 90%, 95%, 96%, 97%, 98%, or 99% identical to these polypeptides and polypeptides encoded by nucleic acids which hybridize, under stringent conditions, to the polynucleotide encoding these polypeptides, or the complement thereof are encompassed by the invention. Polynucleotides encoding these polypeptides are also encompassed by the inventions.

This gene is expressed primarily in diabetic skeletal muscle.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells and/or those tissues indicated in Table 1B and Table 4 corresponding to this gene, particularly of the metabolic system, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for detection, prevention, and/or treatment of diabetes (for example, types I and II diabetes), obesity, eating disorders including bulimia and anorexia, and muscular disorders. Elevated levels of expression in the prostate indicate a role in modulation of tumor progression.

FEATURES OF PROTEIN ENCODED BY GENE NO: 22

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: disorders in

digestive, reproductive, immune/hematopoietic, neural/sensory, musculoskeletal, excretory, endocrine, cardiovascular, connective/epithelial, and respiratory systems. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells and/or those tissues indicated in Table 1B and Table 4 corresponding to this gene, particularly of the digestive, reproductive, immune/hematopoietic, neural/sensory systems, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for detection, prevention, and/or treatment of diabetes (for example, types I and II diabetes), obesity, eating disorders including bulimia and anorexia, and muscular disorders. Elevated levels of expression in the prostate indicate a role in modulation of tumor progression.

FEATURES OF PROTEIN ENCODED BY GENE NO: 23

This gene is expressed primarily in skeletal muscle from normal and type II diabetic patients and to a lesser extent in prostate.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells and/or those tissues indicated in Table 1B and Table 4 corresponding to this gene, particularly of the metabolic system, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for detection, prevention, and/or treatment of diabetes (for example, types I and II diabetes), obesity, eating disorders including bulimia and anorexia, and muscular disorders. Elevated levels of expression in the prostate indicate a role in modulation of tumor progression.

FEATURES OF PROTEIN ENCODED BY GENE NO: 64

This gene is expressed primarily in Soares fetal liver/spleen 1NFLS and Soares Infant Brain 1NIB and to a lesser extent in NCI_CGAP_Co8;NCI_CGAP_Brn23;Soares melanocyte 2NbHM;NCI_CGAP_GCB1;NCI_CGAP_Ut4;Human Colon Cancer;re-excision;NCI_CGAP_Ut2;Ovary, Cancer: (4004332 A2);Stratagene pancreas (#937208);Human Heart;NCI_CGAP_Pan1;Smooth muscle, serum treated;NCI_CGAP_Kid5;Human Microvascular Endothelial Cells, fract. A;Bone Marrow Cell Line (RS4;11);Hodgkin's Lymphoma II;Mo7e Cell Line GM-CSF treated (1ng/ml);Soares placenta Nb2HP;Primary Dendritic Cells, lib 1;Barstead aorta HPLRB3;b4HB3MA Cot8-HAP-Ft;Normal Ovary, #9710G208;NCI_CGAP_GCB0;Human cell line from hepatocellular carinoma;liver;NCI_CGAP_Pr23;NCI_CGAP_Pr6;Human colon carcinoma (HCC) cell line, remake;Human Skin Tumor;Stromal cells 3.88;Lung Carcinoma A549 TNFalpha activated;Human adult (K.Okubo);NCI_CGAP_Co9;H Female Bladder, Adult;Synovial hypoxia-RSF subtracted;NCI_CGAP_Co10;Human Colon; re-excision;NCI_CGAP_Lym12;HEL cell line;Pancreatic cancer #14677A1L;Human Bone Marrow, re-excision;NCI_CGAP_Pr22;Adipose tissue (diabetic type II) #41661;Diabetic Liver 99-09-A281a;human ovarian cancer;Human Prostate Cancer, Stage B2; re-excision;Diabetic Skeletal Muscle #42483;NCI_CGAP_Br2;Spinal cord;Human Adipose;NCI_CGAP_Co3;Palate normal;Epithelial-TNFa and INF induced;Ovary, Cancer (9809C332): Poorly differentiated adenocarcinoma;Ovary, Cancer(4004650 A3): Well-Differentiated Micropapillary Serous Carcinoma;Bone marrow;12 Week Early Stage Human II; Reexcision;Anergic T-cell;Human Osteoclastoma;Human Amygdala;Monocyte activated;Prostate Adenocarcinoma;Soares_placenta_8to9weeks_2NbHP8to9W;HUMAN B CELL LYMPHOMA;Human Thymus Stromal Cells;Liver Tumour Met 5 Tu;Human Bone Marrow, treated;normalized infant brain cDNA;NTERA2 teratocarcinoma cell line+retinoic acid (14 days);T cell helper II;Soares_fetal_heart_NbHH19W;Soares_testis_NHT;HTB;HTC;NCI_CGAP_Skn3;NCI_CGAP_Kid13 .

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes, obesity, and cancer and other hyperproliferative disorders. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the glucose regulatory pathway, liver, spleen and brain, and fetal tissues, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution (significant expression in fetal tissue and gene discovery in diabetes related tissue) indicates that polynucleotides and polypeptides corresponding to this gene are useful for diagnosis and treatment of diabetes and other disorders related to glucose control, and cancer and other hyperproliferative disorders.

FEATURES OF PROTEIN ENCODED BY GENE NO: 65

This gene is expressed primarily in human pituitary, subt IX, Soares Infant Brain 1NIB, and Soares fetal liver spleen 1NFLS, and Diabetic skeletal muscle. and to a lesser extent in NCI_CGAP_Kid11;NCI_CGAP_GC6;Soares_NhHMPu_S1;Fetal Heart, re-excision;Human normal ovary(#9610G215);Human Colon; re-excision;NCI_CGAP_Ut1;H. Epididiymus, cauda;NCI_CGAP_Pr28;Spinal cord;Soares breast 3NbHBst;Human endometrial stromal cells-treated with progesterone;NCI_CGAP_Brn25;normalized infant brain cDNA;Soares melanocyte 2NbHM;Activated T-cell(12h)/Thiouridine-re-excision;Soares_testis_NHT;Primary Dendritic Cells, lib 1;NCI_CGAP_Sub3;Human Cerebellum;Human Pituitary, subtracted VI;Human Pituitary, subtracted VII;Prostate;Prostate Adenocarcinoma cell line cultured in vivo in mice;Human Pituitary, subtracted;Adenocarcinoma of Ovary, Human Cell Line, # OVCAR-3;Human Neutrophils, Activated, re-excision;Human Thyroid;Human Normal Breast;NCI_CGAP_AA1;Apoptotic T-cell, re-excision;Human Epididymus;Human Soleus;Human adult (K.Okubo);Salivary Gland, Lib 2;wilm's tumor;Diabetic Skeletal Muscle #42352-L;NCI_CGAP_Pr22;Human Prostate Cancer, Stage C; re-excission;Human Umbilical Vein Endothelial Cells, uninduced;Macrophage-oxLDL;Stratagene endothelial cell

937223;Soares_NSF_F8_9W_OT_PA_P_S1;Soares breast 2NbHBst;Epithelial-TNFa and INF induced;Human Gall Bladder;Smooth muscle, serum treated;Epithelial-TNFa and INF induced;B-cells (unstimulated);NTERA2, control;Human Fetal Heart;Activated T-Cell (12hs)/Thiouridine labelledEco;B-cells (stimulated);Human Amygdala;NCI_CGAP_Kid3;Pancreas Islet Cell Tumor;NCI_CGAP_Lu5;Human Cerebellum;Soares_pregnant_uterus_NbHPU;Soares_fetal_liver_spleen_1NFLS_S1;NCI_CGAP_HN6;NCI_CGAP_Skn4;NCI_CGAP_Sub4;NCI_CGAP_Brn50.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: Diabetes and other diseases related to glucose control. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the brain and skeletal muscle, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution in diabetic skeletal muscle and the endocrine system (pituitary) indicates that polynucleotides and polypeptides corresponding to this gene are useful for diagnosis and treatment of diabetes and other diseases related to the control of glucose.

FEATURES OF PROTEIN ENCODED BY GENE NO: 66

This gene is expressed primarily in breast, diabetic adipose and muscle tissues and to a lesser extent in ovarian tumors and pancreatic tissues .

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly metabolic disorders, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma,

urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

Embodiments of the invention encompass using polynucleotides and polypeptides (including fragments and variants thereof, and also antibodies, agonists and antagonists thereof) to prevent, diagnose, treat, or ameliorate a disease or disorder. In preferred embodiments, the present invention encompasses a method of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient in which such prevention, diagnosis, treatment, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A and Table 1C (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1C) in an amount effective to prevent, diagnose, treat, or ameliorate the disease or disorder. In another embodiment, the present invention also encompasses methods of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient diagonistic or therapeutic molecules in combination with proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof) as represented by Table 1A and Table 1C.

Polynucleotides and polypeptides corresponding to this gene are useful for the treatment and diagnosis of metabolic disorders in particular obescity and diabetes. In addition the elevated levels of this gene in ovarian cancer indicate a role in for this protein in modulating tumor progression in ovarian and other solid tumors

FEATURES OF PROTEIN ENCODED BY GENE NO: 67

This gene is expressed primarily in diabetic adipose tissue and to a lesser extent in smooth muscle and synovial tissues.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing

immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly metabolic disorders, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

Embodiments of the invention encompass using polynucleotides and polypeptides (including fragments and variants thereof, and also antibodies, agonists and antagonists thereof) to prevent, diagnose, treat, or ameliorate a disease or disorder. In preferred embodiments, the present invention encompasses a method of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient in which such prevention, diagnosis, treatment, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A and Table 1C (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1C) in an amount effective to prevent, diagnose, treat, or ameliorate the disease or disorder. In another embodiment, the present invention also encompasses methods of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient diagonistic or therapeutic molecules in combination with proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof) as represented by Table 1A and Table 1C.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for treatment and diagnosis of diabetes, obesity or metabolic disorders. In addition the elevated levels of expression in smooth muscle and synovial tissue indicates roles in hypertension, atherosclerosis and tissue inflammation respectively.

FEATURES OF PROTEIN ENCODED BY GENE NO: 68

This gene is expressed primarily in pancreatic cancer and to a lesser extent in testis.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes, pancreatic cancer. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the endocrine system, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder. Embodiments of the invention encompass using polynucleotides and polypeptides (including fragments and variants thereof, and also antibodies, agonists and antagonists thereof) to prevent, diagnose, treat, or ameliorate a disease or disorder. In preferred embodiments, the present invention encompasses a method of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient in which such prevention, diagnosis, treatment, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A and Table 1C (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1C) in an amount effective to prevent, diagnose, treat, or ameliorate the disease or disorder. In another embodiment, the present invention also encompasses methods of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient diagonistic or therapeutic molecules in combination with proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof) as represented by Table 1A and Table 1C.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for treatment and diagnosis of tumor progression, in particular adenocarcinomas of the pancreas and other solid tumors.

FEATURES OF PROTEIN ENCODED BY GENE NO: 69

This gene is expressed primarily in pancreas.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to pancreatic disorders (for example: diabetes, pancreatitis, pancreatic cancer). Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the pancreatic, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder. Embodiments of the invention encompass using polynucleotides and polypeptides (including fragments and variants thereof, and also antibodies, agonists and antagonists thereof) to prevent, diagnose, treat, or ameliorate a disease or disorder. In preferred embodiments, the present invention encompasses a method of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient in which such prevention, diagnosis, treatment, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A and Table 1C (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1C) in an amount effective to prevent, diagnose, treat, or ameliorate the disease or disorder. In another embodiment, the present invention also encompasses methods of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient diagonistic or therapeutic molecules in combination with proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof) as represented by Table 1A and Table 1C.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for treatment and diagnosis in pancreatic disorders

FEATURES OF PROTEIN ENCODED BY GENE NO: 70

The translation product of this gene shares sequence homology with a human smooth muscle cell associated protein-1(SMAP-1) which is thought to be important in stimulating stroma-supported erythropoiesis.

This gene is expressed primarily in cardiovascular, musculoskeletal, mixed fetal tissues and to a lesser extent in digestive tissue(s).

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes, disorders in cardiovascular, musculoskeletal and immune/hematopoietic systems. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the cardiovascular, musculoskeletal and immune/hematopoietic, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder. Embodiments of the invention encompass using polynucleotides and polypeptides (including fragments and variants thereof, and also antibodies, agonists and antagonists thereof) to prevent, diagnose, treat, or ameliorate a disease or disorder. In preferred embodiments, the present invention encompasses a method of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient in which such prevention, diagnosis, treatment, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A and Table 1C (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1C) in an amount effective to prevent, diagnose, treat, or ameliorate the disease or disorder. In another embodiment, the present invention also

encompasses methods of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient diagonistic or therapeutic molecules in combination with proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof) as represented by Table 1A and Table 1C.

The tissue distribution and homology to a human smooth muscle cell associated protein-1(SMAP-1) indicates that polynucleotides and polypeptides corresponding to this gene are useful for treatment and diagnosis of disorders in cardiovascular, musculoskeletal and immune/hematopoietic systems.

FEATURES OF PROTEIN ENCODED BY GENE NO: 71

The translation product of this gene shares sequence homology with a human lysosomal membrane sialoglycoprotein (hLGP85) from a human pancreatic islet tumor cell with a high metastatic activity.

This gene is expressed primarily in reproductive, immune/hematopoietic, digestive, musculoskeletal, and neural/sensory tissues and to a lesser extent in respiratory, excretory, mixed fetal, and endocrine tissue(s).

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes, disorders in reproductive, immune/hematopoietic, digestive, musculoskeletal, and neural/sensory systems. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the reproductive, immune/hematopoietic, digestive, musculoskeletal, and neural/sensory, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder. Embodiments of the invention encompass using polynucleotides and polypeptides (including fragments and variants thereof, and also antibodies, agonists and antagonists thereof) to prevent, diagnose,

treat, or ameliorate a disease or disorder. In preferred embodiments, the present invention encompasses a method of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient in which such prevention, diagnosis, treatment, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A and Table 1C (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1C) in an amount effective to prevent, diagnose, treat, or ameliorate the disease or disorder. In another embodiment, the present invention also encompasses methods of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient diagonistic or therapeutic molecules in combination with proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof) as represented by Table 1A and Table 1C.

The tissue distribution and homology to a human lysosomal membrane sialoglycoprotein (hLGP85) indicates that polynucleotides and polypeptides corresponding to this gene are useful for treatment and diagnosis of disorders in reproductive, immune/hematopoietic, digestive, musculoskeletal, and neural/sensory systems.

FEATURES OF PROTEIN ENCODED BY GENE NO: 72

This gene is expressed primarily in neural, reproductive and haemopoietic tissues and to a lesser extent in several other tissues and cell types including cancer.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes, diseases of the neural, reproductive and haemopoietic systems including cancers. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly diseases of the neural, reproductive and haemopoietic systems including cancers, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types

(e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder. Embodiments of the invention encompass using polynucleotides and polypeptides (including fragments and variants thereof, and also antibodies, agonists and antagonists thereof) to prevent, diagnose, treat, or ameliorate a disease or disorder. In preferred embodiments, the present invention encompasses a method of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient in which such prevention, diagnosis, treatment, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A and Table 1C (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1C) in an amount effective to prevent, diagnose, treat, or ameliorate the disease or disorder. In another embodiment, the present invention also encompasses methods of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient diagonistic or therapeutic molecules in combination with proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof) as represented by Table 1A and Table 1C.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for diagnosis and treatment of disorders of the neural, reproductive and haemopoietic systems including cancers.

FEATURES OF PROTEIN ENCODED BY GENE NO: 73

This gene is expressed primarily in pancreatic tissue.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: metabolic disease including diabetes and endocrine disorders. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential

identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the metabolic and endocrine systems, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder. Embodiments of the invention encompass using polynucleotides and polypeptides (including fragments and variants thereof, and also antibodies, agonists and antagonists thereof) to prevent, diagnose, treat, or ameliorate a disease or disorder. In preferred embodiments, the present invention encompasses a method of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient in which such prevention, diagnosis, treatment, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A and Table 1C (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1C) in an amount effective to prevent, diagnose, treat, or ameliorate the disease or disorder. In another embodiment, the present invention also encompasses methods of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient diagonistic or therapeutic molecules in combination with proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof) as represented by Table 1A and Table 1C.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for treatment and diagnosis of disorders of the endocrine and metabolic systems including diabetes.

FEATURES OF PROTEIN ENCODED BY GENE NO: 74

This gene is expressed primarily in pancreatic tissues.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for

diagnosis of diseases and conditions which include but are not limited to: diabetes and other metabolic or endocrine disorders. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the endocrine and metabolic systems, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder. Embodiments of the invention encompass using polynucleotides and polypeptides (including fragments and variants thereof, and also antibodies, agonists and antagonists thereof) to prevent, diagnose, treat, or ameliorate a disease or disorder. In preferred embodiments, the present invention encompasses a method of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient in which such prevention, diagnosis, treatment, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A and Table 1C (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1C) in an amount effective to prevent, diagnose, treat, or ameliorate the disease or disorder. In another embodiment, the present invention also encompasses methods of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient diagonistic or therapeutic molecules in combination with proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof) as represented by Table 1A and Table 1C.

The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for treatment and diagnosis of diseases of the metabolic and endocrine systems including diabetes.

FEATURES OF PROTEIN ENCODED BY GENE NO: 75

The translation product of this gene shares sequence homology with a human putative lymphocyte G0/G1 switch gene which is thought to be important in switch of lymphocytes from the G0 to the G1 phases of the cell cycle. It is also speculated as a potentail oncogene and regulator of latent HIV.

This gene is expressed primarily in immune/hematopoietic, musculoskeletal, digestive, and reproductive tissues and to a lesser extent in respiratory, mixed fetal, neural/sensory, excretory, connective/epithelial, and endocrine tissue(s).

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes, disorders in immune/hematopoietic, musculoskeletal, digestive, and reproductive systems. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the immune/hematopoietic, musculoskeletal, digestive, and reproductive, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder. Embodiments of the invention encompass using polynucleotides and polypeptides (including fragments and variants thereof, and also antibodies, agonists and antagonists thereof) to prevent, diagnose, treat, or ameliorate a disease or disorder. In preferred embodiments, the present invention encompasses a method of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient in which such prevention, diagnosis, treatment, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A and Table 1C (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1C) in an amount effective to prevent, diagnose, treat, or ameliorate the disease or disorder. In another embodiment, the present invention also encompasses methods of preventing, diagnosing, treating, or ameliorating a disease or

disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient diagonistic or therapeutic molecules in combination with proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof) as represented by Table 1A and Table 1C.

The tissue distribution and homology to a human putative lymphocyte G0/G1 switch gene indicates that polynucleotides and polypeptides corresponding to this gene are useful for treatment and diagnosis of disorders in immune/hematopoietic, musculoskeletal, digestive, and reproductive tissues systems.

FEATURES OF PROTEIN ENCODED BY GENE NO: 76

This gene is expressed primarily in Pancreas normal PCA4 No;Pancreas Tumor PCA4 Tu;Pancreatic Cancer #0009A186;normal pancreas- sample number 42218.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes, Pancreatic Cancer. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the immune and gigestive systems, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder. Embodiments of the invention encompass using polynucleotides and polypeptides (including fragments and variants thereof, and also antibodies, agonists and antagonists thereof) to prevent, diagnose, treat, or ameliorate a disease or disorder. In preferred embodiments, the present invention encompasses a method of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient in which such prevention, diagnosis, treatment, or amelioration is desired a protein, nucleic acid, or antibody of the

invention (or fragment or variant thereof) represented by Table 1A and Table 1C (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1C) in an amount effective to prevent, diagnose, treat, or ameliorate the disease or disorder. In another embodiment, the present invention also encompasses methods of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient diagonistic or therapeutic molecules in combination with proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof) as represented by Table 1A and Table 1C. The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for Pancreatic Cancer.

FEATURES OF PROTEIN ENCODED BY GENE NO: 77

The translation product of this gene shares sequence homology with SDF-1 (stromal cell-derived factor 1 precursor, also called pre-B-cell-stimulating factor) which may be implicated in the aggressiveness of the autoimmune process leading to type 1 diabetes. Also, overexpression of SDF-1 and aberrant HIV-1 expression in circulating lymphocytes appear to be linked to the development of AIDS-lymphoma.

This gene is expressed primarily in reproductive, neural/sensory, musculoskeletal, immune/hematopoietic, and digestive tissues and to a lesser extent in connective/epithelial, endocrine, cardiovascular, mixed fetal, and excretory tissues.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes, disorders in reproductive, neural/sensory, musculoskeletal, immune/hematopoietic, digestive, connective/epithelial, endocrine, cardiovascular, mixed fetal, and excretory systems. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the reproductive, neural/sensory, musculoskeletal, immune/hematopoietic, digestive, connective/epithelial, endocrine, cardiovascular, mixed fetal, and excretory systems, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial

fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder. Embodiments of the invention encompass using polynucleotides and polypeptides (including fragments and variants thereof, and also antibodies, agonists and antagonists thereof) to prevent, diagnose, treat, or ameliorate a disease or disorder. In preferred embodiments, the present invention encompasses a method of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient in which such prevention, diagnosis, treatment, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A and Table 1C (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1C) in an amount effective to prevent, diagnose, treat, or ameliorate the disease or disorder. In another embodiment, the present invention also encompasses methods of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient diagonistic or therapeutic molecules in combination with proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof) as represented by Table 1A and Table 1C.

The tissue distribution and homology to SDF-1 indicates that polynucleotides and polypeptides corresponding to this gene are useful for treatment and/or diagnosis of disorders in reproductive, neural/sensory, musculoskeletal, immune/hematopoietic, digestive, connective/epithelial, endocrine, cardiovascular, mixed fetal, and excretory systems.

FEATURES OF PROTEIN ENCODED BY GENE NO: 78

The translation product of this gene shares sequence homology with Transmembrane 9 superfamily protein member 2, an integral membrane protein (with 9 spanning domains) of unknown function, although it is speculated to be a channel or transporter.

This gene is expressed primarily in Cancer Pancreas #14677A1L and Human umbilical vein endothelial cells, IL-4 induced. The closest match to this gene is known to be highly abudant and pancreas and kidney.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes, and other disorders related to improper glucose regulation, and pancreatic cancer. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the pancreas and umbilical vein, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder. The tissue distribution indicates that polynucleotides and polypeptides corresponding to this gene are useful for diagnosis and treatment of diabetes and other disorders related to improper glucose control, and diagnosis and treatment of cancer and other hyperproliferative disorders, particularly pancreatic cancer.

FEATURES OF PROTEIN ENCODED BY GENE NO: 79

The translation product of this gene shares sequence homology with ribonuclease K6 precurson (EC 3.1.27.) which is thought to be important in host defense.

This gene is expressed primarily in primary dendritic cells and osteoclastoma and to a lesser extent in NCI_CGAP_Brn23;Soares placenta Nb2HP;Soares_NhHMPu_S1;Primary Dendritic cells,frac 2;Soares_fetal_liver_spleen_1NFLS_S1;NCI_CGAP_GCB1;Soares fetal liver spleen 1NFLS;Human Osteoclastoma, re-excision;H Macrophage (GM-CSF treated), re-excision;Human Pancreas Tumor; Reexcision;Normal colon;NCI_CGAP_GC6;Soares_multiple_sclerosis_2NbHMSP;Osteoclastoma;NCI_CGAP_Ov35;Human aorta polyA+ (TFujiwara);Patient #6 Acute Myeloid Leukemia/SGAH;Brain Frontal Cortex, re-excision;Pancreatic cancer #14677A1L;NCI_CGAP_Ut1;human ovarian cancer;CD40 activated monocyte dendridic cells;Ulcerative Colitis;Macrophage (GM-CSF treated);Human Liver, normal;Fetal Liver, subtraction II;Human T-Cell Lymphoma;NCI_CGAP_GC4;Colon Carcinoma;B-cells (unstimulated);Human Placenta;Soares_placenta_8to9weeks_2NbHP8to9W;Spleen, Chronic lymphocytic leukemia;Soares ovary tumor NbHOT;Human Bone Marrow, treated;Dendritic cells,

pooled;Colon Tumor II;Soares_total_fetus_Nb2HF8_9w;Colon Normal III;Soares_NFL_T_GBC_S1;NCI_CGAP_Sub3

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes, infectious disease, and cancer and other proliferative disorders, particularly of immune/hematapoetic cells and bone. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the glucose control system, immune and hematopoetic cells, and bone tissue, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder. Embodiments of the invention encompass using polynucleotides and polypeptides (including fragments and variants thereof, and also antibodies, agonists and antagonists thereof) to prevent, diagnose, treat, or ameliorate a disease or disorder. In preferred embodiments, the present invention encompasses a method of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient in which such prevention, diagnosis, treatment, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A and Table 1C (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1C) in an amount effective to prevent, diagnose, treat, or ameliorate the disease or disorder. In another embodiment, the present invention also encompasses methods of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient diagonistic or therapeutic molecules in combination

with proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof) as represented by Table 1A and Table 1C.

The tissue distribution and homology to Ribonuclease K6 indicates that polynucleotides and polypeptides corresponding to this gene are useful for diagnosis and treatment of diabetes, and disorders related to diabetes. In addition, the probable association of ribonuclease K6 with infectious disease defense suggests a role for this gene in that process.

FEATURES OF PROTEIN ENCODED BY GENE NO: 80

The translation product of this gene shares sequence homology with ephrin-A1, one of three genes that encode the eph-related tyrosine kinase ligands which is thought to be important in apoptosis, as the expression of this gene is known to be induced by TNF alpha. This protein is known to be anchored to the cell membrane.

This gene is expressed primarily in human endometrial tumor and Soares HhHMPu S1 (pooled melanocyte, fetal heart, and pregnant uterus), rectal tumor, pancreatic adenocarcinoma, and Soares fetal liver/spleen, and to a lesser extent in Soares_fetal_heart_NbHH19W;Liver Tumour Met 5 Tu;Colon Normal;NCI_CGAP_Ut1;NCI_CGAP_Pr28;Soares breast 3NbHBst;Colon, normal;NCI_CGAP_Ut3;Human Prostate;NCI_CGAP_Pr1;NCI_CGAP_Kid3;NCI_CGAP_Kid5;Human Adult Heart;re-excision;Soares_placenta_8to9weeks_2NbHP8to9W;Soares_fetal_lung_NbHL19W;HBGB's differential consolidation;Aorta endothelial cells + TNF-a;NCI_CGAP_Co12;Lung, Cancer (4005163 B7): Invasive, Poorly Diff. Adenocarcinoma, Metastatic;NCI_CGAP_Ut4;Human Fetal Epithelium (Skin);Breast, Cancer: (4004943 A5);NCI_CGAP_Gas4;Stratagene endothelial cell 937223;Human Pancreas Tumor;Liver, Hepatoma;Stratagene liver (#937224);Stratagene colon (#937204);CHME Cell Line;treated 5 hrs;Human Pancreas Tumor; Reexcision;Epithelial-TNFa and INF induced;Human Placenta;NCI_CGAP_GC6;Endothelial-induced;NCI_CGAP_Brn25;human tonsils;Stratagene lung (#937210);Human Primary Breast Cancer Reexcision;Human fetal heart, Lambda ZAP Express;Colon Tumor;Stomach Normal;Stomach Tumour;Soares melanocyte 2NbHM;Soares_total_fetus_Nb2HF8_9w;Soares_pregnant_uterus_NbHPU;Soares_NFL_T_GBC_S1;Soares placenta Nb2HP;NCI_CGAP_Sub3;HeLa cell line;NCI_CGAP_Ov35;Human Greater Omentum, fract II remake,;Human Pancreatic Langerhans;Human Fetal Liver, subtracted, neg clone;Ea.hy.926 cell line;HPAS (human

pancreas, subtracted);NCI_CGAP_Lu19;NCI_CGAP_HN4;NCI_CGAP_Co16;H. Normalized Fetal Liver, II;Human Adult Pulmonary;Human Pancreatic Carcinoma;Hodgkin's Lymphoma I;Healing Abdomen wound;70&90 min post incision;Human Thyroid;Lung Carcinoma A549 TNFalpha activated;Stomach cancer (human);re-excision;Smooth muscle, IL1b induced;NCI_CGAP_Co10;Salivary Gland, Lib 2;NCI_CGAP_Pr12;Diabetic Liver #1042;Human Adult Small Intestine;Breast, Normal: (4005522B2);Gessler Wilms tumor;Pancreatic cancer #14677A1L;Human Thymus;Human Umbilical Vein; Reexcision;Adipose tissue (diabetic type II) #41661;Stratagene fetal spleen (#937205);Healing groin wound - zero hr post-incision (control);Stratagene HeLa cell s3 937216;Human Uterine Cancer;Soares_NSF_F8_9W_OT_PA_P_S1;Epithelial-TNFa and INF induced;Human Adipose;Human Whole Six Week Old Embryo;Olfactory epithelium;nasalcavity;NCI_CGAP_Co3;Hepatocellular Tumor; re-excision;Fetal Liver, subtraction II;breast lymph node CDNA library;NCI_CGAP_Co8;Colon Carcinoma;Human Testes Tumor;Colon Normal II;Ovary, Cancer (9809C332): Poorly differentiated adenocarcinoma;Ovary, Cancer(4004650 A3): Well-Differentiated Micropapillary Serous Carcinoma;Normal colon;Human Fetal Lung III;Human Testes, Reexcision;Endothelial cells-control;Human Adult Pulmonary;re-excision;Human Placenta;Prostate Adenocarcinoma;Liver Normal Met5No;NCI_CGAP_Lu5;H. Frontal cortex,epileptic;re-excision;NTERA2 teratocarcinoma cell line+retinoic acid (14 days);Soares_parathyroid_tumor_NbHPA;Soares_testis_NHT;Soares infant brain 1NIB;HEMBA1;NCI_CGAP_Co19;NCI_CGAP_Lu27;NCI_CGAP_Skn3;NCI_CGAP_Skn 4;NCI_CGAP_Brn53;NCI_CGAP_Brn66;NCI_CGAP_Brn70;NCI_CGAP_Kid13;NIH_MG C_69

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: cancer and other hyperproliferative disorders, as well as diabetes. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the reproductive and glucose control systems, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a

disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

The tissue distribution and homology to ephrin-A1 a protein known to be induced by TNF alpha, indicates that polynucleotides and polypeptides corresponding to this gene are useful for diagnosis and treatment of cancer and other hyperproliferative disorders. In addition, the discovery of this gene in diabetes related tissues (pancreas) suggests a role in diabetes and diseases such as obesity that are related to glucose control.

FEATURES OF PROTEIN ENCODED BY GENE NO: 81

The translation product of this gene shares sequence homology with Human IgE Fc receptor gamma chain which is a major component of the high affinity IgE receptor; 2 gamma chains are paired with an alpha and beta chain in the mature protein. This protein apparently arose from a gene duplication event with the T-cell receptor zeta chain. This receptor is known to be a mediator of allergy (See, e,g., Kunster et al. J Biol Chem 1990 Apr 15;265(11):6448-52).

This gene is expressed primarily in Human activated monocytes and to a lesser extent in other immune cels (macrophages, dendritic cells, neutrophils, etc) as well as other cell types. A complete list of known expression is: Human Activated Monocytes;Soares placenta Nb2HP;CD40 activated monocyte dendridic cells;NCI_CGAP_Kid5;Soares fetal liver spleen 1NFLS;Macrophage (GM-CSF treated);H Macrophage (GM-CSF treated), re-excision;Primary Dendritic cells,frac 2;DCB;Breast, Cancer: (4005522 A2);Macrophage-oxLDL;Spleen, Chronic lymphocytic leukemia;Human Bone Marrow, treated;Primary Dendritic Cells, lib 1;Stratagene placenta (#937225);Human Activated T-Cells;Human Activated T-Cells, re-excision;mononucleocytes from patient;Macrophage-oxLDL; re-excision;breast lymph node CDNA library;Neutrophils control; re-excision;Human Osteoclastoma;Stratagene lung (#937210);NCI_CGAP_Brn23;Soares_multiple_sclerosis_2NbHMSP; Soares_total_fetus_Nb2HF8_9w;Soares_fetal_liver_spleen_1NFLS_S1;Soares_NFL_T_GBC_S1;Soares_NhHMPu_S1;NN0047;Human Membrane Bound Polysomes;Human Macrophage, subtracted;Larynx carcinoma IV;PCR, pBMC I/C treated;Human Fetal Brain, normalized AC5002;Activated T-Cells, 8 hrs, subtracted;NCI_CGAP_Lu19;Lung, Normal: (4005313 B1);Untreated Monocytes;prostate-edited;Human promyelocyte;NCI_CGAP_Br1.1;Human Fetal Bone;SGAH patient #9;NCI_CGAP_Ut3;Human Normal Breast;Ovarian cancer, Serous Papillary

Adenocarcinoma;Apoptotic T-cell, re-excision;Patient #6 Acute Myeloid Leukemia/SGAH;pBMC stimulated w/ poly I/C;H. Meningioma, M1;Ovarian Cancer;Human Neutrophil;pancreatic cancer sample # 4004959A1;Diabetic Skeletal Muscle #42352-L;Human Prostate Cancer, Stage C; re-excission;NCI_CGAP_Gas4;Eosinophils from John Hopkins University;NCI_CGAP_Br2;Epithelial-TNFa and INF induced;NCI_CGAP_Pan1;Ovary, Cancer: (4004576 A8);12 Week Old Early Stage Human;NCI_CGAP_GC4;CD34 depleted Buffy Coat (Cord Blood), re-excision;Human Neutrophil, Activated;NCI_CGAP_Brn25;NCI_CGAP_Kid3;Soares_placenta_8to9weeks_2NbHP8to9W ;Liver Tumour Met 5 Tu;Neutrophils IL-1 and LPS induced;NCI_CGAP_Lu5;Dendritic cells, pooled;neutrophils control;Colon Tumor II;Colon Normal III;Soares_fetal_heart_NbHH19W;Human blood platelets;ADB;BM;EN0013;cdA

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes, allergy and infectious diseases as well as autoimmune disorders such as lupus. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the immune system and disorders related to aberrant activity of the immune system, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., immune, cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder. Embodiments of the invention encompass using polynucleotides and polypeptides (including fragments and variants thereof, and also antibodies, agonists and antagonists thereof) to prevent, diagnose, treat, or ameliorate a disease or disorder. In preferred embodiments, the present invention encompasses a method of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient in which such prevention, diagnosis, treatment, or amelioration is

desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A and Table 1C (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1C) in an amount effective to prevent, diagnose, treat, or ameliorate the disease or disorder. In another embodiment, the present invention also encompasses methods of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient diagonistic or therapeutic molecules in combination with proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof) as represented by Table 1A and Table 1C.

The tissue distribution and homology to IgE receptor Fc gamma chain, part of a receptor that has a major role in the allergic response, indicates that polynucleotides and polypeptides corresponding to this gene are useful for diagnosis and treatment of allergies, infectious diseases, and autoimmune disorders.

FEATURES OF PROTEIN ENCODED BY GENE NO: 82

The translation product of this gene shares sequence homology with Complement subcomponent C1q chain C precursor which is known to be important in mediating the cellular immune response.

This gene is expressed primarily in Primary dendritic cells and to a lesser extent in a variety immune/hematopoetic cell types and to a lesser extent in a variety of normal and diseased tissues. The complete list of known tissues is: Primary Dendritic Cells, lib 1;Primary Dendritic cells,frac 2;Spleen, Chronic lymphocytic leukemia;Soares fetal liver spleen 1NFLS;NCI_CGAP_Co8;Colon Tumor II;Human Placenta;Human Adult Pulmonary;re-excision;Stomach Normal;Soares placenta Nb2HP;Soares_fetal_heart_NbHH19W;CD40 activated monocyte dendridic cells;Soares breast 2NbHBst;NCI_CGAP_Pan1;Human T-Cell Lymphoma;Soares_placenta_8to9weeks_2NbHP8to9W;Liver Normal Met5No;Stomach Tumour;Colon Normal III;Human Chronic Synovitis;Hemangiopericytoma;Human Adipose;Stratagene liver (#937224);Ovary, Cancer: (4004576 A8);Human Placenta (re-excision);Colon Tumor;Rejected Kidney, lib 4;Colon Normal II;Ovary, Cancer (9809C332): Poorly differentiated adenocarcinoma;NCI_CGAP_Brn25;Colon, normal;Soares_pregnant_uterus_NbHPU;Soares_NFL_T_GBC_S1;Soares infant brain 1NIB;b4HB3MA-Cot109+10-Bio;Human Resting Macrophage;Human Thymus;Human

Adult Lymph Node, subtracted;Human Spleen;Prostate BPH,Lib 2, subtracted;Human Gastrocnemius;NCI_CGAP_Co4;Human fetal lung;Lung, Normal: (4005313 B1);Normal skeletal muscle #96-08-A171;NCI_CGAP_Eso2;Normalized infant brain, Bento Soares;stomach cancer (human);Barstead spleen HPLRB2;NCI_CGAP_Lu24;SKIN;NCI_CGAP_Lu1;Human Pituitary, subtracted;NCI_CGAP_Ut3;Human Synovium;Stomach cancer (human);re-excision;NCI_CGAP_Co9;Breast, Cancer: (4005522 A2);Patient #6 Acute Myeloid Leukemia/SGAH;Ovarian cancer, Serous Papillary Adenocarcinoma;NCI_CGAP_Co14;B Cell lymphoma;Human Osteosarcoma;Human Colon; re-excision;Human Adipose Tissue, re-excision;wilm's tumor;Spleen metastic melanoma;Breast, Cancer: (4004943 A5);Adipose tissue (diabetic type I, obese) #41706;Breast, Normal: (4005522B2);Brain Frontal Cortex, re-excision;Pancreatic cancer #14677A1L;NCI_CGAP_Ut1;NCI_CGAP_Kid6;Clontech human aorta polyA+ mRNA (#6572);Ovary, Cancer: (4004332 A2);Human Pancreas Tumor;Human Fetal Brain;Ulcerative Colitis;Human Gall Bladder;Human Liver, normal;Palate normal;Fetal Heart; reexcision;Soares breast 3NbHBst;NCI_CGAP_GC4;Human Pancreas Tumor; Reexcision;Human Fetal Kidney; Reexcision;Normal colon;Pancreas normal PCA4 No;Human Placenta;human tonsils;NCI_CGAP_Kid5;Liver Tumour Met 5 Tu;Rectum tumour;Soares ovary tumor NbHOT;Human Bone Marrow, treated;Colon Normal;NCI_CGAP_Lu5;Hodgkin's Lymphoma II;Soares_fetal_lung_NbHL19W;Soares_total_fetus_Nb2HF8_9w;Soares_fetal_liver_spleen_1NFLS_S1;Soares_testis_NHT;GKC;NCI_CGAP_Ov39;NCI_CGAP_Sub3;NCI_CGAP_Brn65

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes, cancer and other proliferative disorders, infectious diseases, allergy, and autoimmune disorders. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the immune system, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the

expression level in healthy tissue or bodily fluid from an individual not having the disorder. Embodiments of the invention encompass using polynucleotides and polypeptides (including fragments and variants thereof, and also antibodies, agonists and antagonists thereof) to prevent, diagnose, treat, or ameliorate a disease or disorder. In preferred embodiments, the present invention encompasses a method of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient in which such prevention, diagnosis, treatment, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A and Table 1C (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1C) in an amount effective to prevent, diagnose, treat, or ameliorate the disease or disorder. In another embodiment, the present invention also encompasses methods of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient diagonistic or therapeutic molecules in combination with proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof) as represented by Table 1A and Table 1C.

The tissue distribution and homology to C1q chain C precursor indicates that polynucleotides and polypeptides corresponding to this gene are useful for immunomodulation, particularly in the treatment of cancer and other proliferative disorders, infectious diseases, allergy, and autoimmune disorders.

FEATURES OF PROTEIN ENCODED BY GENE NO: 83

The translation product of this gene shares sequence homology with pancreatic colipase which is thought to be important in digestion of fats. In the absence of colipase, the activity of pancreatic lipase is inhibited by bile salts, preventing efficient triglyceride metabolism. (see, e.g., Biochemistry 1990 Jan 23;29(3):823-8)

This gene is expressed exclusively in pancreas.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: diabetes (Type-I

and Type II, obesity, endocrine disorders, and pancreatic cancer. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the pancreas, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., endocrine, cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder. Embodiments of the invention encompass using polynucleotides and polypeptides (including fragments and variants thereof, and also antibodies, agonists and antagonists thereof) to prevent, diagnose, treat, or ameliorate a disease or disorder. In preferred embodiments, the present invention encompasses a method of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient in which such prevention, diagnosis, treatment, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A and Table 1C (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1C) in an amount effective to prevent, diagnose, treat, or ameliorate the disease or disorder. In another embodiment, the present invention also encompasses methods of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient diagonistic or therapeutic molecules in combination with proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof) as represented by Table 1A and Table 1C.

The tissue distribution (in pancreas) and homology to colipase indicates that polynucleotides and polypeptides corresponding to this gene are useful for diagnosis and treatment of diabetes, diabetes related obesity, and non-diabetes related obesity.

FEATURES OF PROTEIN ENCODED BY GENE NO: 84

This gene is expressed primarily in eosinophils and to a lesser extent in lung cancer, brain, and bone marrow.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: allergy and asthma. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the immune system, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

Embodiments of the invention encompass using polynucleotides and polypeptides (including fragments and variants thereof, and also antibodies, agonists and antagonists thereof) to prevent, diagnose, treat, or ameliorate a disease or disorderr (such as, for example, allergies and asthma). In preferred embodiments, the present invention encompasses a method of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient in which such prevention, diagnosis, treatment, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A and Table 1C (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1C) in an amount effective to prevent, diagnose, treat, or ameliorate the disease or disorder.

In another embodiment, the present invention also encompasses methods of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient diagnostic or therapeutic molecules in combination with proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof) as represented by Table 1A and Table 1C.

Expression of this gene in eosinophils, brain, bone marrow, and lung cancer indicates that polynucleotides and polypeptides corresponding to this gene are useful for the treatment and/or detection of immune disorders including allergy, asthma, eosinophilia, eosinopenia, eosinophilic granuloma, arthritis, immunodeficiencies, lupus and leukemia, hematopoietic disorders, neurological disorders, and lung cancer.

FEATURES OF PROTEIN ENCODED BY GENE NO: 85

This gene is expressed primarily in malignant tissues, such as lung cancer, prostate cell line and to a lesser extent in Wilm's tumor and leukemia.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: cancers (such as lung and prostate cancer, and leukemia/lymphoma). Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of lung, prostate, and hematopoietic cells, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

Embodiments of the invention encompass using polynucleotides and polypeptides (including fragments and variants thereof, and also antibodies, agonists and antagonists thereof) to prevent, diagnose, treat, or ameliorate a disease or disorder (such as, for example, leukemia and lymphoma). In preferred embodiments, the present invention encompasses a method of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient in which such prevention, diagnosis, treatment, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A and Table 1C (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1C) in an amount effective to prevent, diagnose, treat, or ameliorate the disease or disorder.

In another embodiment, the present invention also encompasses methods of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient diagnostic or therapeutic molecules in combination with proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof) as represented by Table 1A and Table 1C. The tissue distribution/expression indicates that polynucleotides and polypeptides corresponding to this gene are useful for the diagnosis and treatment of various cancer/malignancy including but not limited to lung cancer, prostate cancer, Wilms tumor, leukemia and lymphoma.

FEATURES OF PROTEIN ENCODED BY GENE NO: 86

This gene is expressed primarily in eosinophils.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: allergy and asthma. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the immune system, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

Embodiments of the invention encompass using polynucleotides and polypeptides (including fragments and variants thereof, and also antibodies, agonists and antagonists thereof) to prevent, diagnose, treat, or ameliorate a disease or disorderr (such as, for example, allergies and asthma). In preferred embodiments, the present invention encompasses a method of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient in which such prevention, diagnosis, treatment, or amelioration is desired a protein, nucleic

acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A and Table 1C (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1C) in an amount effective to prevent, diagnose, treat, or ameliorate the disease or disorder.

In another embodiment, the present invention also encompasses methods of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient diagnostic or therapeutic molecules in combination with proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof) as represented by Table 1A and Table 1C. Expression of this gene in eosinophils indicates that polynucleotides and polypeptides corresponding to this gene are useful for the treatment and/or detection of immune disorders including allergy, asthma, eosinophilia, eosinopenia, eosinophilic granuloma, arthritis, immunodeficiencies, lupus and leukemia.

FEATURES OF PROTEIN ENCODED BY GENE NO: 87

This gene is expressed primarily in eosinophils.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: allergy, asthma, and autoimmune disorders. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the immune system expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

Embodiments of the invention encompass using polynucleotides and polypeptides (including fragments and variants thereof, and also antibodies, agonists and antagonists thereof) to prevent, diagnose, treat, or ameliorate a disease or disorderr (such as, for example, allergies and asthma). In preferred embodiments, the present invention encompasses a

method of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient in which such prevention, diagnosis, treatment, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A and Table 1C (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1C) in an amount effective to prevent, diagnose, treat, or ameliorate the disease or disorder.

In another embodiment, the present invention also encompasses methods of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient diagnostic or therapeutic molecules in combination with proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof) as represented by Table 1A and Table 1C.
The tissue distribution of this gene in eosinophils indicates that polynucleotides and polypeptides corresponding to this gene are useful for the treatment and/or detection of immune disorders including allergy, asthma, eosinophilia, eosinopenia, eosinophilic granuloma, arthritis, immunodeficiencies, lupus and leukemia.

FEATURES OF PROTEIN ENCODED BY GENE NO: 88

This gene is expressed primarily in eosinophils and dendritic cells.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for diagnosis of diseases and conditions which include but are not limited to: asthma, allergies, inflammation, autoimmune disorders, and other disorders of the immune system including cancer. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the immune system, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from

an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

Embodiments of the invention encompass using polynucleotides and polypeptides (including fragments and variants thereof, and also antibodies, agonists and antagonists thereof) to prevent, diagnose, treat, or ameliorate a disease or disorder (such as, for example, allergies and asthma). In preferred embodiments, the present invention encompasses a method of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient in which such prevention, diagnosis, treatment, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A and Table 1C (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1C) in an amount effective to prevent, diagnose, treat, or ameliorate the disease or disorder.

In another embodiment, the present invention also encompasses methods of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient diagnostic or therapeutic molecules in combination with proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof) as represented by Table 1A and Table 1C. Expression of this gene and its encoded polypeptides in immune cells particularly eosinophils and dendritic cells indicates that this gene may be useful for the treatment and diagnosis of disorders of the immune system such as asthma, autoimmune syndromes such as systemic lupus erythematosus and rheumatoid arthritis as well as immune deficiency syndromes and allergies. Furthermore, since these immune cells function as antigen presenting cells, the gene and its protein may be useful for the treatment of cancer and other diseases where priming of immune system with specific disease antigens may prove useful.

FEATURES OF PROTEIN ENCODED BY GENE NO: 89

This gene is expressed primarily in eosinophils.

Polynucleotides and polypeptides of the invention are useful as reagents for differential identification of the tissue(s) or cell type(s) present in a biological sample and for

diagnosis of diseases and conditions which include but are not limited to: allergy and asthma. Similarly, polypeptides and antibodies directed to these polypeptides are useful in providing immunological probes for differential identification of the tissue(s) or cell type(s). For a number of disorders of the above tissues or cells, particularly of the immune system, expression of this gene at significantly higher or lower levels may be routinely detected in certain tissues or cell types (e.g., cancerous and wounded tissues) or bodily fluids (e.g., serum, plasma, urine, synovial fluid and spinal fluid) or another tissue or sample taken from an individual having such a disorder, relative to the standard gene expression level, i.e., the expression level in healthy tissue or bodily fluid from an individual not having the disorder.

Embodiments of the invention encompass using polynucleotides and polypeptides (including fragments and variants thereof, and also antibodies, agonists and antagonists thereof) to prevent, diagnose, treat, or ameliorate a disease or disorder (such as, for example, allergies and asthma). Preferred embodiments, the present invention encompasses a method of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient in which such prevention, diagnosis, treatment, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A and Table 1C (in the same row as the disease or disorder to be treated is listed in the "Preferred Indications" column of Table 1C) in an amount effective to prevent, diagnose, treat, or ameliorate the disease or disorder.

In another embodiment, the present invention also encompasses methods of preventing, diagnosing, treating, or ameliorating a disease or disorder related to one, two, three, or more, of the cells, tissues, and organs where the polynucleotide and/or polypeptide is expressed (for example, as indicated in Column 8 of Table 1B) or as indicated in the "Preferred Indications" column of Table 1C; comprising administering to a patient diagnostic or therapeutic molecules in combination with proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof) as represented by Table 1A and Table 1C. Expression of this gene in eosinophils indicates that polynucleotides and polypeptides corresponding to this gene are useful for the treatment and/or detection of immune disorders including allergy, asthma, eosinophilia, eosinopenia, eosinophilic granuloma, arthritis, immunodeficiencies, lupus and leukemia.

Definitions

The following definitions are provided to facilitate understanding of certain terms used throughout this specification.

In the present invention, "isolated" refers to material removed from its original environment (*e.g.*, the natural environment if it is naturally occurring), and thus is altered "by the hand of man" from its natural state. For example, an isolated polynucleotide could be part of a vector or a composition of matter, or could be contained within a cell, and still be "isolated" because that vector, composition of matter, or particular cell is not the original environment of the polynucleotide. The term "isolated" does not refer to genomic or cDNA libraries, whole cell total or mRNA preparations, genomic DNA preparations (including those separated by electrophoresis and transferred onto blots), sheared whole cell genomic DNA preparations or other compositions where the art demonstrates no distinguishing features of the polynucleotide/sequences of the present invention.

In the present invention, a "secreted" protein refers to those proteins capable of being directed to the ER, secretory vesicles, or the extracellular space as a result of a signal sequence, as well as those proteins released into the extracellular space without necessarily containing a signal sequence. If the secreted protein is released into the extracellular space, the secreted protein can undergo extracellular processing to produce a "mature" protein. Release into the extracellular space can occur by many mechanisms, including exocytosis and proteolytic cleavage.

As used herein, a "polynucleotide" refers to a molecule having a nucleic acid sequence encoding SEQ ID NO:Y or a fragment or variant thereof (*e.g.*, the polypeptide delinated in columns fourteen and fifteen of Table 1A); a nucleic acid sequence contained in SEQ ID NO:X (as described in column 5 of Table 1A and/or column 4 of Table 1B) or the complement thereof; a cDNA sequence contained in Clone ID: (as described in column 2 of Table 1A and/or 1B and contained within a library deposited with the ATCC). For example, the polynucleotide can contain the nucleotide sequence of the full length cDNA sequence, including the 5' and 3' untranslated sequences, the coding region, as well as fragments, epitopes, domains, and variants of the nucleic acid sequence. Moreover, as used herein, a "polypeptide" refers to a molecule having an amino acid sequence encoded by a polynucleotide of the invention as broadly defined (obviously excluding poly-Phenylalanine or poly-Lysine peptide sequences which result from translation of a polyA tail of a sequence corresponding to a cDNA).

In the present invention, "SEQ ID NO:X" was often generated by overlapping sequences contained in multiple clones (contig analysis). A representative clone containing all or most of the sequence for SEQ ID NO:X is deposited at Human Genome Sciences, Inc. (HGS) in a catalogued and archived library. As shown, for example, in column 2 of Table 1B, each clone is identified by a cDNA Clone ID (identifier generally referred to herein as Clone ID:). Each Clone ID is unique to an individual clone and the Clone ID is all the information needed to retrieve a given clone from the HGS library. Table 4 provides a list of the deposited cDNA libraries. One can use the Clone ID: to determine the library source by reference to Table 4. Table 4 lists the deposited cDNA libraries by name and links each library to an ATCC Deposit. Library names contain four characters, for example, "HTWE." The name of a cDNA clone (Clone ID) isolated from that library begins with the same four characters, for example "HTWEP07". As mentioned below, Table 1A and/or 1B correlates the Clone ID names with SEQ ID NO:X. Thus, starting with an SEQ ID NO:X, one can use Tables 1A, 1B, and 4 to determine the corresponding Clone ID, which library it came from and which ATCC deposit the library is contained in. Furthermore, it is possible to retrieve a given cDNA clone from the source library by techniques known in the art and described elsewhere herein. The ATCC is located at 10801 University Boulevard, Manassas, Virginia 20110-2209, USA. The ATCC deposits were made pursuant to the terms of the Budapest Treaty on the international recognition of the deposit of microorganisms for the purposes of patent procedure.

In specific embodiments, the polynucleotides of the invention are at least 15, at least 30, at least 50, at least 100, at least 125, at least 500, or at least 1000 continuous nucleotides but are less than or equal to 300 kb, 200 kb, 100 kb, 50 kb, 15 kb, 10 kb, 7.5kb, 5 kb, 2.5 kb, 2.0 kb, or 1 kb, in length. In a further embodiment, polynucleotides of the invention comprise a portion of the coding sequences, as disclosed herein, but do not comprise all or a portion of any intron. In another embodiment, the polynucleotides comprising coding sequences do not contain coding sequences of a genomic flanking gene (*i.e.*, 5' or 3' to the gene of interest in the genome). In other embodiments, the polynucleotides of the invention do not contain the coding sequence of more than 1000, 500, 250, 100, 50, 25, 20, 15, 10, 5, 4, 3, 2, or 1 genomic flanking gene(s).

A "polynucleotide" of the present invention also includes those polynucleotides capable of hybridizing, under stringent hybridization conditions, to sequences contained in SEQ ID NO:X, or the complement thereof (*e.g.*, the complement of any one, two, three, four,

or more of the polynucleotide fragments described herein), the polynucleotide sequence delineated in columns 7 and 8 of Table 1A or the complement thereof, the polynucleotide sequence delineated in columns 8 and 9 of Table 2 or the complement thereof, and/or cDNA sequences contained in Clone ID: (*e.g.*, the complement of any one, two, three, four, or more of the polynucleotide fragments, or the cDNA clone within the pool of cDNA clones deposited with the ATCC, described herein)."Stringent hybridization conditions" refers to an overnight incubation at 42 degree C in a solution comprising 50% formamide, 5x SSC (750 mM NaCl, 75 mM trisodium citrate), 50 mM sodium phosphate (pH 7.6), 5x Denhardt's solution, 10% dextran sulfate, and 20 μg/ml denatured, sheared salmon sperm DNA, followed by washing the filters in 0.1x SSC at about 65 degree C.

Also contemplated are nucleic acid molecules that hybridize to the polynucleotides of the present invention at lower stringency hybridization conditions. Changes in the stringency of hybridization and signal detection are primarily accomplished through the manipulation of formamide concentration (lower percentages of formamide result in lowered stringency); salt conditions, or temperature. For example, lower stringency conditions include an overnight incubation at 37 degree C in a solution comprising 6X SSPE (20X SSPE = 3M NaCl; 0.2M NaH_2PO_4; 0.02M EDTA, pH 7.4), 0.5% SDS, 30% formamide, 100 ug/ml salmon sperm blocking DNA; followed by washes at 50 degree C with 1XSSPE, 0.1% SDS. In addition, to achieve even lower stringency, washes performed following stringent hybridization can be done at higher salt concentrations (*e.g.* 5X SSC).

Note that variations in the above conditions may be accomplished through the inclusion and/or substitution of alternate blocking reagents used to suppress background in hybridization experiments. Typical blocking reagents include Denhardt's reagent, BLOTTO, heparin, denatured salmon sperm DNA, and commercially available proprietary formulations. The inclusion of specific blocking reagents may require modification of the hybridization conditions described above, due to problems with compatibility.

Of course, a polynucleotide which hybridizes only to polyA+ sequences (such as any 3' terminal polyA+ tract of a cDNA shown in the sequence listing), or to a complementary stretch of T (or U) residues, would not be included in the definition of "polynucleotide," since such a polynucleotide would hybridize to any nucleic acid molecule containing a poly (A) stretch or the complement thereof (*e.g.*, practically any double-stranded cDNA clone generated using oligo dT as a primer).

The polynucleotide of the present invention can be composed of any

polyribonucleotide or polydeoxribonucleotide, which may be unmodified RNA or DNA or modified RNA or DNA. For example, polynucleotides can be composed of single- and double-stranded DNA, DNA that is a mixture of single- and double-stranded regions, single- and double-stranded RNA, and RNA that is mixture of single- and double-stranded regions, hybrid molecules comprising DNA and RNA that may be single-stranded or, more typically, double-stranded or a mixture of single- and double-stranded regions. In addition, the polynucleotide can be composed of triple-stranded regions comprising RNA or DNA or both RNA and DNA. A polynucleotide may also contain one or more modified bases or DNA or RNA backbones modified for stability or for other reasons. "Modified" bases include, for example, tritylated bases and unusual bases such as inosine. A variety of modifications can be made to DNA and RNA; thus, "polynucleotide" embraces chemically, enzymatically, or metabolically modified forms.

In specific embodiments, the polynucleotides of the invention are at least 15, at least 30, at least 50, at least 100, at least 125, at least 500, or at least 1000 continuous nucleotides but are less than or equal to 300 kb, 200 kb, 100 kb, 50 kb, 15 kb, 10 kb, 7.5kb, 5 kb, 2.5 kb, 2.0 kb, or 1 kb, in length. In a further embodiment, polynucleotides of the invention comprise a portion of the coding sequences, as disclosed herein, but do not comprise all or a portion of any intron. In another embodiment, the polynucleotides comprising coding sequences do not contain coding sequences of a genomic flanking gene (*i.e.*, 5' or 3' to the gene of interest in the genome). In other embodiments, the polynucleotides of the invention do not contain the coding sequence of more than 1000, 500, 250, 100, 50, 25, 20, 15, 10, 5, 4, 3, 2, or 1 genomic flanking gene(s).

"SEQ ID NO:X" refers to a polynucleotide sequence described in column 5 of Table 1A, while "SEQ ID NO:Y" refers to a polypeptide sequence described in column 11 of Table 1A. SEQ ID NO:X is identified by an integer specified in column 6 of Table 1A. The polypeptide sequence SEQ ID NO:Y is a translated open reading frame (ORF) encoded by polynucleotide SEQ ID NO:X. The polynucleotide sequences are shown in the sequence listing immediately followed by all of the polypeptide sequences. Thus, a polypeptide sequence corresponding to polynucleotide sequence SEQ ID NO:2 is the first polypeptide sequence shown in the sequence listing. The second polypeptide sequence corresponds to the polynucleotide sequence shown as SEQ ID NO:3, and so on.

The polypeptide of the present invention can be composed of amino acids joined to each other by peptide bonds or modified peptide bonds, *i.e.*, peptide isosteres, and may

contain amino acids other than the 20 gene-encoded amino acids. The polypeptides may be modified by either natural processes, such as posttranslational processing, or by chemical modification techniques which are well known in the art. Such modifications are well described in basic texts and in more detailed monographs, as well as in a voluminous research literature. Modifications can occur anywhere in a polypeptide, including the peptide backbone, the amino acid side-chains and the amino or carboxyl termini. It will be appreciated that the same type of modification may be present in the same or varying degrees at several sites in a given polypeptide. Also, a given polypeptide may contain many types of modifications. Polypeptides may be branched, for example, as a result of ubiquitination, and they may be cyclic, with or without branching. Cyclic, branched, and branched cyclic polypeptides may result from posttranslation natural processes or may be made by synthetic methods. Modifications include acetylation, acylation, ADP-ribosylation, amidation, covalent attachment of flavin, covalent attachment of a heme moiety, covalent attachment of a nucleotide or nucleotide derivative, covalent attachment of a lipid or lipid derivative, covalent attachment of phosphotidylinositol, cross-linking, cyclization, disulfide bond formation, demethylation, formation of covalent cross-links, formation of cysteine, formation of pyroglutamate, formylation, gamma-carboxylation, glycosylation, GPI anchor formation, hydroxylation, iodination, methylation, myristoylation, oxidation, pegylation, proteolytic processing, phosphorylation, prenylation, racemization, selenoylation, sulfation, transfer-RNA mediated addition of amino acids to proteins such as arginylation, and ubiquitination. (See, for instance, PROTEINS - STRUCTURE AND MOLECULAR PROPERTIES, 2nd Ed., T. E. Creighton, W. H. Freeman and Company, New York (1993); POSTTRANSLATIONAL COVALENT MODIFICATION OF PROTEINS, B. C. Johnson, Ed., Academic Press, New York, pgs. 1-12 (1983); Seifter *et al.*, Meth. Enzymol. 182:626-646 (1990); Rattan *et al.*, Ann. N.Y. Acad. Sci. 663:48-62 (1992)).

"SEQ ID NO:X" refers to a polynucleotide sequence described, for example, in Tables 1A, 1B or 2, while "SEQ ID NO:Y" refers to a polypeptide sequence described in column 11 of Table 1A and or column 6 of Table 1B. SEQ ID NO:X is identified by an integer specified in column 3 of Table 1B. The polypeptide sequence SEQ ID NO:Y is a translated open reading frame (ORF) encoded by polynucleotide SEQ ID NO:X. "Clone ID:" refers to a cDNA clone described in column 2 of Table 1A and/or 1B.

"A polypeptide having functional activity" refers to a polypeptide capable of displaying one or more known functional activities associated with a full-length (complete)

protein. Such functional activities include, but are not limited to, biological activity, antigenicity [ability to bind (or compete with a polypeptide for binding) to an anti-polypeptide antibody], immunogenicity (ability to generate antibody which binds to a specific polypeptide of the invention), ability to form multimers with polypeptides of the invention, and ability to bind to a receptor or ligand for a polypeptide.

The polypeptides of the invention can be assayed for functional activity (*e.g.* biological activity) using or routinely modifying assays known in the art, as well as assays described herein. Specifically, one of skill in the art may routinely assay secreted polypeptides (including fragments and variants) of the invention for activity using assays as described in the examples section below.

"A polypeptide having biological activity" refers to a polypeptide exhibiting activity similar to, but not necessarily identical to, an activity of a polypeptide of the present invention, including mature forms, as measured in a particular biological assay, with or without dose dependency. In the case where dose dependency does exist, it need not be identical to that of the polypeptide, but rather substantially similar to the dose-dependence in a given activity as compared to the polypeptide of the present invention (*i.e.*, the candidate polypeptide will exhibit greater activity or not more than about 25-fold less and, preferably, not more than about tenfold less activity, and most preferably, not more than about three-fold less activity relative to the polypeptide of the present invention).

Description of the Tables

Description of Table 1A

Table 1A summarizes information concerning certain polynucleotides and polypeptides of the invention.

The first column provides the gene number in the application for each clone identifier.

The second column provides a unique clone identifier, "Clone ID:", for a cDNA clone related to each contig sequence disclosed in Table 1A.

In the third column, the cDNA Clones identified in the second column were deposited as indicated (*i.e.*, by ATCC Deposit Nr. and deposit date). Some of the deposits contain multiple different clones corresponding to the same gene.

In the fourth column, "Vector" refers to the type of vector contained in the corresponding cDNA Clone identified in the second column.

In the fifth column, the nucleotide sequence identified as "NT SEQ ID NO:X" was assembled from partially homologous ("overlapping") sequences obtained from the corresponding cDNA clone identified in the second column and, in some cases, from additional related cDNA clones. The overlapping sequences were assembled into a single contiguous sequence of high redundancy (usually three to five overlapping sequences at each nucleotide position), resulting in a final sequence identified as SEQ ID NO:X.

The sixth column, "Total NT Seq.", refers to the total number of nucleotides in the contig sequence identified as SEQ ID NO:X."

The deposited clone may contain all or most of these sequences, reflected by the nucleotide position indicated as "5' NT of Clone Seq." (seventh column) and the "3' NT of Clone Seq." (eighth column) of SEQ ID NO:X.

In the ninth column, the nucleotide position of SEQ ID NO:X of the putative start codon (methionine) is identified as "5' NT of Start Codon."

Similarly, in column ten, the nucleotide position of SEQ ID NO:X of the predicted signal sequence is identified as "5' NT of First AA of Signal Pep."

In the eleventh column, the translated amino acid sequence, beginning with the methionine, is identified as "AA SEQ ID NO:Y," although other reading frames can also be routinely translated using known molecular biology techniques. The polypeptides produced by these alternative open reading frames are specifically contemplated by the present invention.

In the twelfth and thirteenth columns of Table 1A, the first and last amino acid

position of SEQ ID NO:Y of the predicted signal peptide is identified as "First AA of Sig Pep" and "Last AA of Sig Pep."

In the fourteenth column, the predicted first amino acid position of SEQ ID NO:Y of the secreted portion is identified as "First AA of Secreted Portion".

The amino acid position of SEQ ID NO:Y of the last amino acid encoded by the open reading frame is identified in the fifteenth column as "Last AA of ORF".

SEQ ID NO:X (where X may be any of the polynucleotide sequences disclosed in the sequence listing) and the translated SEQ ID NO:Y (where Y may be any of the polypeptide sequences disclosed in the sequence listing) are sufficiently accurate and otherwise suitable for a variety of uses well known in the art and described further below. For instance, SEQ ID NO:X is useful for designing nucleic acid hybridization probes that will detect nucleic acid sequences contained in SEQ ID NO:X or the cDNA contained in the deposited clone. These probes will also hybridize to nucleic acid molecules in biological samples, thereby enabling a variety of forensic and diagnostic methods of the invention. Similarly, polypeptides identified from SEQ ID NO:Y may be used, for example, to generate antibodies which bind specifically to proteins containing the polypeptides and the secreted proteins encoded by the cDNA clones identified in Table 1A and/or elsewhere herein

Nevertheless, DNA sequences generated by sequencing reactions can contain sequencing errors. The errors exist as misidentified nucleotides, or as insertions or deletions of nucleotides in the generated DNA sequence. The erroneously inserted or deleted nucleotides cause frame shifts in the reading frames of the predicted amino acid sequence. In these cases, the predicted amino acid sequence diverges from the actual amino acid sequence, even though the generated DNA sequence may be greater than 99.9% identical to the actual DNA sequence (for example, one base insertion or deletion in an open reading frame of over 1000 bases).

Accordingly, for those applications requiring precision in the nucleotide sequence or the amino acid sequence, the present invention provides not only the generated nucleotide sequence identified as SEQ ID NO:X, and the predicted translated amino acid sequence identified as SEQ ID NO:Y, but also a sample of plasmid DNA containing a human cDNA of the invention deposited with the ATCC, as set forth in Table 1A. The nucleotide sequence of each deposited plasmid can readily be determined by sequencing the deposited plasmid in accordance with known methods

The predicted amino acid sequence can then be verified from such deposits.

Moreover, the amino acid sequence of the protein encoded by a particular plasmid can also be directly determined by peptide sequencing or by expressing the protein in a suitable host cell containing the deposited human cDNA, collecting the protein, and determining its sequence. Also provided in Table 1A, is the name of the vector which contains the cDNA plasmid (fourth column). Each vector is routinely used in the art. The following additional information is provided for convenience.

Vectors Lambda Zap (U.S. Patent Nos. 5,128,256 and 5,286,636), Uni-Zap XR (U.S. Patent Nos. 5,128, 256 and 5,286,636), Zap Express (U.S. Patent Nos. 5,128,256 and 5,286,636), pBluescript (pBS) (Short, J. M. *et al.*, *Nucleic Acids Res. 16:*7583-7600 (1988); Alting-Mees, M. A. and Short, J. M., *Nucleic Acids Res. 17:*9494 (1989)) and pBK (Alting-Mees, M. A. *et al.*, *Strategies 5:*58-61 (1992)) are commercially available from Stratagene Cloning Systems, Inc., 11011 N. Torrey Pines Road, La Jolla, CA, 92037. pBS contains an ampicillin resistance gene and pBK contains a neomycin resistance gene. Phagemid pBS may be excised from the Lambda Zap and Uni-Zap XR vectors, and phagemid pBK may be excised from the Zap Express vector. Both phagemids may be transformed into *E. coli* strain XL-1 Blue, also available from Stratagene

Vectors pSport1, pCMVSport 1.0, pCMVSport 2.0 and pCMVSport 3.0, were obtained from Life Technologies, Inc., P. O. Box 6009, Gaithersburg, MD 20897. All Sport vectors contain an ampicillin resistance gene and may be transformed into *E. coli* strain DH10B, also available from Life Technologies. See, for instance, Gruber, C. E., *et al.*, *Focus 15:*59 (1993). Vector lafmid BA (Bento Soares, Columbia University, New York, NY) contains an ampicillin resistance gene and can be transformed into *E. coli* strain XL-1 Blue. Vector pCR®2.1, which is available from Invitrogen, 1600 Faraday Avenue, Carlsbad, CA 92008, contains an ampicillin resistance gene and may be transformed into *E. coli* strain DH10B, available from Life Technologies. See, for instance, Clark, J. M., *Nuc. Acids Res. 16:*9677-9686 (1988) and Mead, D. *et al., Bio/Technology 9:* (1991).

The present invention also relates to the genes corresponding to SEQ ID NO:X, SEQ ID NO:Y, and/or a deposited cDNA (cDNA Clone ID). The corresponding gene can be isolated in accordance with known methods using the sequence information disclosed herein. Such methods include, but are not limited to, preparing probes or primers from the disclosed sequence and identifying or amplifying the corresponding gene from appropriate sources of genomic material.

Also provided in the present invention are allelic variants, orthologs, and/or species

homologs. Procedures known in the art can be used to obtain full-length genes, allelic variants, splice variants, full-length coding portions, orthologs, and/or species homologs of genes corresponding to SEQ ID NO:X and SEQ ID NO:Y using information from the sequences disclosed herein or the clones deposited with the ATCC. For example, allelic variants and/or species homologs may be isolated and identified by making suitable probes or primers from the sequences provided herein and screening a suitable nucleic acid source for allelic variants and/or the desired homologue.

The present invention provides a polynucleotide comprising, or alternatively consisting of, the nucleic acid sequence of SEQ ID NO:X and/or a cDNA contained in ATCC Deposit No.Z. The present invention also provides a polypeptide comprising, or alternatively, consisting of, the polypeptide sequence of SEQ ID NO:Y, a polypeptide encoded by SEQ ID NO:X, and/or a polypeptide encoded by a cDNA contained in ATCC deposit No.Z. Polynucleotides encoding a polypeptide comprising, or alternatively consisting of the polypeptide sequence of SEQ ID NO:Y, a polypeptide encoded by SEQ ID NO:X and/or a polypeptide encoded by the cDNA contained in ATCC Deposit No.Z, are also encompassed by the invention. The present invention further encompasses a polynucleotide comprising, or alternatively consisting of the complement of the nucleic acid sequence of SEQ ID NO:X, and/or the complement of the coding strand of the cDNA contained in ATCC Deposit No.Z.

Table 1A

Gene No.	cDNA Clone ID	ATCC Deposit Nr and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
1	HSMPG12	PTA-3680 08/30/2001	pCMVSport 3.0	11	1893	1	1893	104	104	204	1	40	41	88
1	HSMPG12	PTA-3680 08/30/2001	pCMVSport 3.0	100	2382	1	2382	119	119	293	1	40	41	88
2	HNLJK11	PTA-3680 08/30/2001	pSport1	12	993	1	993	276	276	205	1	35	36	210
2	HNLJK11	PTA-3680 08/30/2001	pSport1	101	1021	1	1021	305	305	294	1	35	36	210
3	HSMPJ30	PTA-3680 08/30/2001	pCMVSport 3.0	13	643	1	643	143	143	206	1	18	19	167
3	HSMPJ30	PTA-3680 08/30/2001	pCMVSport 3.0	102	1552	1	1552	156	156	295	1	18	19	365
3	HSMPJ30	PTA-3680 08/30/2001	pCMVSport 3.0	103	599	1	599		155	296	1	1	2	99
4	HTAOK88	PTA-3680 08/30/2001	pCMVSport 3.0	14	1205	1	1205	85	85	207	1	24	25	196
4	HTAOK88	PTA-3680 08/30/2001	pCMVSport 3.0	104	1216	1	1216	97	97	297	1	24	25	196
4	HTAOK88	PTA-3680 08/30/2001	pCMVSport 3.0	105	3759	394	3759	478	478	298	1	24	25	196
5	HDSIX96	PTA-3680 08/30/2001	pCMVSport 3.0	15	537	1	537	91	91	208	1	29	30	84
5	HDSIX96	PTA-3680 08/30/2001	pCMVSport 3.0	106	485	1	485	91	91	299	1	29	30	84

Gene No.	cDNA Clone ID	ATCC Deposit Nr and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
5	HDSIX96	PTA-3680 08/30/2001	pCMVSport 3.0	107	499	1	499	103	103	300	1	29	30	84
5	HDSIX96	PTA-3680 08/30/2001	pCMVSport 3.0	108	499	1	499	103	103	301	1	29	30	84
5	HDSIX96	PTA-3680 08/30/2001	pCMVSport 3.0	109	180	1	180		39	302	1	1	2	47
6	HATYJ68	PTA-3680 08/30/2001	pCMVSport 3.0	16	2826	26	2014	104	104	209	1	32	33	400
6	HATYJ68	PTA-3680 08/30/2001	pCMVSport 3.0	110	2015	1	2015	91	91	303	1	32	33	400
6	HATYJ68	PTA-3680 08/30/2001	pCMVSport 3.0	111	2044	26	2030	104	104	304	1	32	33	400
7	HDSJH26	PTA-3680 08/30/2001	pCMVSport 3.0	17	1508	1	1508	129	129	210	1	32	33	125
7	HDSJH26	PTA-3680 08/30/2001	pCMVSport 3.0	112	1509	1	1509	130	130	305	1	32	33	125
7	HDSJH26	PTA-3680 08/30/2001	pCMVSport 3.0	113	1497	1	1497	119	119	306	1	32	33	125
7	HDSJH26	PTA-3680 08/30/2001	pCMVSport 3.0	114	988	1	988		85	307	1	21	22	65
8	HNMIG09	PTA-3680 08/30/2001	pCMVSport 3.0	18	1631	1	1631	176	176	211	1	27	28	294
8	HNMIG09	PTA-3680 08/30/2001	pCMVSport 3.0	115	1605	1	1605	149	149	308	1	27	28	294
9	HLCMJ69	PTA-3680 08/30/2001	Uni-ZAP XR	19	1881	1	1881	88	88	212	1	25	26	283
9	HLCMJ69	PTA-3680 08/30/2001	Uni-ZAP XR	116	1881	1	1849	76	76	309	1	25	26	283
10	HNMIB80	PTA-3680 08/30/2001	pCMVSport 3.0	20	2220	325	2220	465	465	213	1	34	35	396

Gene No.	cDNA Clone ID	ATCC Deposit Nr and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
11	HDLLA60	PTA-3680 08/30/2001	pCMVSport 3.0	21	2559	1	2559	117	117	214	1	27	28	672
11	HDLLA60	PTA-3680 08/30/2001	pCMVSport 3.0	117	2717	352	2460	268	268	310	1	27	28	672
11	HDLLA60	PTA-3680 08/30/2001	pCMVSport 3.0	118	1818	1	1818		1142	311	1	9	10	10
12	HDSIX56	PTA-3680 08/30/2001	pCMVSport 3.0	22	1994	1	1994	33	33	215	1	29	30	160
12	HDSIX56	PTA-3680 08/30/2001	pCMVSport 3.0	119	1984	1	1984	22	22	312	1	29	30	160
12	HDSIX56	PTA-3680 08/30/2001	pCMVSport 3.0	120	1994	1	1994	33	33	313	1	29	30	160
13	HFLEZ28	PTA-3680 08/30/2001	pCMVSport 3.0	23	2208	1	923	160	160	216	1	39	40	215
13	HFLEZ28	PTA-3680 08/30/2001	pCMVSport 3.0	121	948	1	948	171	171	314	1	39	40	215
13	HFLEZ28	PTA-3680 08/30/2001	pCMVSport 3.0	122	923	1	923	160	160	315	1	39	40	215
13	HFLEZ28	PTA-3680 08/30/2001	pCMVSport 3.0	123	965	1	965	188	188	316	1	39	40	215
14	HDMSA74	PTA-3705 09/17/01	pCMVSport 3.0	24	2244	8	2244	208	208	217	1	21	22	535
14	HDMSA74	PTA-3705 09/17/01	pCMVSport 3.0	124	623	8	623	208	208	317	1	21	22	138
14	HDMSA74	PTA-3705 09/17/01	pCMVSport 3.0	125	169	1	169		2	318	1	1	2	56
15	HDMSQ09	PTA-3705 09/17/01	pCMVSport 3.0	25	2138	1	2138	108	108	218	1	22	23	314
15	HDMSQ09	PTA-3705 09/17/01	pCMVSport 3.0	126	832	1	832	92	92	319	1	22	23	230

Gene No.	cDNA Clone ID	ATCC Deposit Nr and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
15	HDMSQ09	PTA-3705 09/17/01	pCMVSport 3.0	127	1334	642	1316		113	320	1	1	2	145
16	HDMTG72	PTA-3705 09/17/01	pCMVSport 3.0	26	466	1	466	46	46	219	1	43	44	97
16	HDMTG72	PTA-3705 09/17/01	pCMVSport 3.0	128	543	64	543	93	93	321	1	43	44	97
17	HTAOQ18	PTA-3705 09/17/01	pCMVSport 3.0	27	885	1	865	88	88	220	1	38	39	218
17	HTAOQ18	PTA-3705 09/17/01	pCMVSport 3.0	129	876	1	876	100	100	322	1	38	39	218
18	HLAPM62	PTA-3705 09/17/01	pCMVSport 3.0	28	659	1	659	213	213	221	1	16	17	83
18	HLAPM62	PTA-3705 09/17/01	pCMVSport 3.0	130	640	1	640	197	197	323	1	16	17	83
19	HDLWY45	PTA-3705 09/17/01	pCMVSport 3.0	29	2529	1	2529	108	108	222	1	27	28	672
19	HDLWY45	PTA-3705 09/17/01	pCMVSport 3.0	131	2717	352	2717	268	268	324	1	27	28	672
19	HDLWY45	PTA-3705 09/17/01	pCMVSport 3.0	132	413	1	413	25	25	325	1	12	13	34
20	HDMKF05	PTA-3705 09/17/01	pCMVSport 3.0	30	385	1	385	27	27	223	1	19	20	109
20	HDMKF05	PTA-3705 09/17/01	pCMVSport 3.0	133	451	83	451	93	93	326	1	19	20	109
21	HDMRQ63	PTA-3705 09/17/01	pCMVSport 3.0	31	611	1	611	129	129	224	1	23	24	90
21	HDMRQ63	PTA-3705 09/17/01	pCMVSport 3.0	134	579	1	579		137	327	1	1	2	83
22	HDMKE89	PTA-3705 09/17/01	pCMVSport 3.0	32	1224	1	1224	121	121	225	1	16	17	331

Gene No.	cDNA Clone ID	ATCC Deposit Nr and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
22	HDMKE89	PTA-3705 09/17/01	pCMVSport 3.0	135	2069	32	1234	134	134	328	1	16	17	331
23	HNMIK76	PTA-3705 09/17/01	pCMVSport 3.0	33	1233	1	1233	95	95	226	1	22	23	105
23	HNMIK76	PTA-3705 09/17/01	pCMVSport 3.0	136	1227	1	1213	78	78	329	1	22	23	105
24	HDHMA62	PTA-3705 09/17/01	pCMVSport 2.0	34	791	1	791	197	197	227	1	30	31	89
24	HDHMA62	PTA-3705 09/17/01	pCMVSport 2.0	137	1022	551	1022	736	736	330	1	30	31	89
24	HDHMA62	PTA-3705 09/17/01	pCMVSport 2.0	138	228	1	228		2	331	1	1	2	49
25	HDQDT24	PTA-3705 09/17/01	pCMVSport 3.0	35	1834	202	1800	62	62	228	1	21	22	205
25	HDQDT24	PTA-3705 09/17/01	pCMVSport 3.0	139	932	202	932	62	62	332	1	21	22	205
25	HDQDT24	PTA-3705 09/17/01	pCMVSport 3.0	140	1745	1064	1709		2	333	1	1	2	556
25	HDQDT24	PTA-3705 09/17/01	pCMVSport 3.0	141	627	51	627	109	109	334	1	21	22	173
26	HEOOV77	PTA-3705 09/17/01	pSport1	36	3289	1	3289	68	68	229	1	16	17	697
26	HEOOV77	PTA-3705 09/17/01	pSport1	142	1344	9	1344	52	52	335	1	16	17	127
26	HEOOV77	PTA-3705 09/17/01	pSport1	143	1644	59	1644	115	115	336	1	16	17	346
26	HEOOV77	PTA-3705 09/17/01	pSport1	144	3264	1	3264		3	337	1	1	2	710
27	HERHG93	PTA-3705 09/17/01	pCMVSport 3.0	37	923	121	923	193	193	230	1	26	27	146

Gene No.	cDNA Clone ID	ATCC Deposit Nr and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
27	HERHG93	PTA-3705 09/17/01	pCMVSport 3.0	145	922	121	922	193	193	338	1	26	27	146
28	HESXG41	PTA-3705 09/17/01	pCMVSport 3.0	38	655	1	655	97	97	231	1	31	32	110
28	HESXG41	PTA-3705 09/17/01	pCMVSport 3.0	146	665	1	665	108	108	339	1	31	32	110
29	HFKFO58	PTA-3705 09/17/01	Uni-ZAP XR	39	975	1	975	49	49	232	1	27	28	168
29	HFKFO58	PTA-3705 09/17/01	Uni-ZAP XR	147	1142	129	1142	179	179	340	1	27	28	168
30	HFPKB52	PTA-3705 09/17/01	Uni-ZAP XR	40	1778	1	1778	31	31	233	1	29	30	186
30	HFPKB52	PTA-3705 09/17/01	Uni-ZAP XR	148	1148	25	1148	45	45	341	1	29	30	227
30	HFPKB52	PTA-3705 09/17/01	Uni-ZAP XR	149	1691	62	1691	24	24	342	1	29	30	57
30	HFPKB52	PTA-3705 09/17/01	Uni-ZAP XR	150	1719	1	682		3	343	1	1	2	121
31	HGARX38	PTA-3705 09/17/01	pSport1	41	516	1	516	79	79	234	1	18	19	146
32	HMAGO59	PTA-3705 09/17/01	Uni-ZAP XR	42	1319	89	722	100	100	235	1	24	25	93
32	HMAGO59	PTA-3705 09/17/01	Uni-ZAP XR	151	722	89	722	100	100	344	1	24	25	93
32	HMAGO59	PTA-3705 09/17/01	Uni-ZAP XR	152	1281	95	1281	62	62	345	1	24	25	93
32	HMAGO59	PTA-3705 09/17/01	Uni-ZAP XR	153	356	94	317		129	346	1	1	2	48
33	HMTSX03	PTA-3705 09/17/01	pCMVSport 3.0	43	1556	1	1556	23	23	236	1	25	26	491

Gene No.	cDNA Clone ID	ATCC Deposit Nr and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
33	HMTSX03	PTA-3705 09/17/01	pCMVSport 3.0	154	624	1	624	6	6	347	1	25	26	206
34	HMTUZ60	PTA-3705 09/17/01	pCMVSport 3.0	44	995	1	995	45	45	237	1	31	32	114
35	HNFKC14	PTA-3705 09/17/01	Uni-ZAP XR	45	408	1	408	143	143	238	1	15	16	88
35	HNFKC14	PTA-3705 09/17/01	Uni-ZAP XR	155	447	1	447	163	163	348	1	15	16	95
36	HNSQN50	PTA-3705 09/17/01	pSport1	46	2097	1	2097	81	81	239	1	20	21	498
36	HNSQN50	PTA-3705 09/17/01	pSport1	156	1050	56	1050	109	109	349	1	20	21	310
36	HNSQN50	PTA-3705 09/17/01	pSport1	157	678	216	678		236	350	1	1	2	99
37	HNSUM63	PTA-3705 09/17/01	pSport1	47	1002	1	946	126	126	240	1	40	41	205
37	HNSUM63	PTA-3705 09/17/01	pSport1	158	959	1	959	142	142	351	1	40	41	205
38	HNSWV68	PTA-3705 09/17/01	pSport1	48	2139	1580	2139		710	241	1	1	2	197
39	HOC2T95	PTA-3705 09/17/01	pSport1	49	940	124	789	172	172	242	1	18	19	167
39	HOC2T95	PTA-3705 09/17/01	pSport1	159	681	1	681	65	65	352	1	18	19	167
40	HODNV05	PTA-3705 09/17/01	pSport1	50	705	1	705	86	86	243	1	36	37	88
40	HODNV05	PTA-3705 09/17/01	pSport1	160	720	1	720	102	102	353	1	36	37	88
41	HPDSA48	PTA-3705 09/17/01	pBluescript SK-	51	1018	58	451		45	244	1	7	8	30

Gene No.	cDNA Clone ID	ATCC Deposit Nr and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
41	HPDSA48	PTA-3705 09/17/01	pBluescript SK-	161	878	1	821	78	78	354	1	20	21	117
41	HPDSA48	PTA-3705 09/17/01	pBluescript SK-	162	843	1	843	78	78	355	1	20	21	117
42	HSKIT24	PTA-3705 09/17/01	pBluescript	52	2046	1	2046	30	30	245	1	21	22	533
42	HSKIT24	PTA-3705 09/17/01	pBluescript	163	609	1	609	20	20	356	1	21	22	196
42	HSKIT24	PTA-3705 09/17/01	pBluescript	164	1461	69	1461	90	90	357	1	21	22	457
42	HSKIT24	PTA-3705 09/17/01	pBluescript	165	829	122	797		107	358	1	1	2	97
43	HSVAA83	PTA-3705 09/17/01	Uni-ZAP XR	53	1183	1	1183	102	102	246	1	28	29	245
43	HSVAA83	PTA-3705 09/17/01	Uni-ZAP XR	166	635	1	635	94	94	359	1	28	29	180
43	HSVAA83	PTA-3705 09/17/01	Uni-ZAP XR	167	1195	25	1195	119	119	360	1	28	29	112
43	HSVAA83	PTA-3705 09/17/01	Uni-ZAP XR	168	1055	25	1055	119	119	361	1	28	29	245
43	HSVAA83	PTA-3705 09/17/01	Uni-ZAP XR	169	1188	85	1188	118	118	362	1	28	29	245
44	HUTJT76	PTA-3705 09/17/01	pSport1	54	1042	1	1042	31	31	247	1	43	44	307
44	HUTJT76	PTA-3705 09/17/01	pSport1	170	425	1	425	14	14	363	1	43	44	137
44	HUTJT76	PTA-3705 09/17/01	pSport1	171	1187	1	1187	14	14	364	1	43	44	307
45	HUVHZ75	PTA-3705 09/17/01	Uni-ZAP XR	55	2894	82	2798		109	248	1	17	18	42

Gene No.	cDNA Clone ID	ATCC Deposit Nr and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
45	HUVHZ75	PTA-3705 09/17/01	Uni-ZAP XR	172	562	1	562		199	365	1	1	2	57
46	HVAQO59	PTA-3705 09/17/01	pSport1	56	749	1	749	67	67	249	1	40	41	227
46	HVAQO59	PTA-3705 09/17/01	pSport1	173	822	107	822	96	96	366	1	39	40	54
47	HWHPA16	PTA-3705 09/17/01	pCMVSport 3.0	57	425	1	425	26	26	250	1	22	23	85
47	HWHPA16	PTA-3705 09/17/01	pCMVSport 3.0	174	398	6	355	20	20	367	1	22	23	85
48	HYCAD48	PTA-3705 09/17/01	pCMVSport 3.0	58	1307	1	1307	70	70	251	1	17	18	334
48	HYCAD48	PTA-3705 09/17/01	pCMVSport 3.0	175	1377	1	1377	59	59	368	1	17	18	334
49	HHFZF42	PTA-3705 09/17/01	pCMVSport 3.0	59	476	1	476	188	188	252	1	27	28	96
49	HHFZF42	PTA-3705 09/17/01	pCMVSport 3.0	176	482	1	406		1	369	1	1	2	88
50	HHAQY41	PTA-3705 09/17/01	pCMVSport 3.0	60	597	110	597	217	217	253	1	19	20	82
50	HHAQY41	PTA-3705 09/17/01	pCMVSport 3.0	177	498	1	498	119	119	370	1	19	20	82
51	HNSRC60	PTA-3705 09/17/01	pSport1	61	1594	1	1594	174	174	254	1	20	21	217
51	HNSRC60	PTA-3705 09/17/01	pSport1	178	631	1	631	158	158	371	1	20	21	136
51	HNSRC60	PTA-3705 09/17/01	pSport1	179	2914	182	760		2161	372	1	1	2	78
52	HFDUT84	PTA-3705 09/17/01	pSport1	62	1202	1	1202	92	92	255	1	33	34	107

Gene No.	cDNA Clone ID	ATCC Deposit Nr and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
52	HFDUT84	PTA-3705 09/17/01	pSport1	180	1003	251	1003	331	331	373	1	33	34	107
53	HHA1S21	PTA-3705 09/17/01	pCMVSport 3.0	63	894	1	894	111	111	256	1	49	50	146
53	HHA1S21	PTA-3705 09/17/01	pCMVSport 3.0	181	604	1	604	94	94	374	1	49	50	146
54	HHMQL78	PTA-3705 09/17/01	pSport1	64	972	1	972	139	139	257	1	43	44	205
54	HHMQL78	PTA-3705 09/17/01	pSport1	182	1361	412	1361	538	538	375	1	43	44	205
55	HNSMZ53	PTA-3705 09/17/01	pSport1	65	726	1	726	52	52	258	1	32	33	153
55	HNSMZ53	PTA-3705 09/17/01	pSport1	183	426	1	426	52	52	376	1	32	33	125
56	HNGMJ63	PTA-3705 09/17/01	Uni-ZAP XR	66	1753	1	1753	40	40	259	1	26	27	99
56	HNGMJ63	PTA-3705 09/17/01	Uni-ZAP XR	184	627	1	627	33	33	377	1	26	27	99
57	HNSIT44	PTA-3705 09/17/01	pSport1	67	1079	1	1079	124	124	260	1	23	24	171
57	HNSIT44	PTA-3705 09/17/01	pSport1	185	528	1	528	124	124	378	1	23	24	135
58	HHMSF21	PTA-3705 09/17/01	pSport1	68	507	1	507	135	135	261	1	33	34	82
58	HHMSF21	PTA-3705 09/17/01	pSport1	186	522	1	522	152	152	379	1	33	34	82
59	HNSES94	PTA-3705 09/17/01	pSport1	69	580	1	580	271	271	262	1	47	48	103
59	HNSES94	PTA-3705 09/17/01	pSport1	187	1491	877	1472		152	380	1	1	2	370

Gene No.	cDNA Clone ID	ATCC Deposit Nr and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
60	HH1MU43	PTA-3705 09/17/01	pCMVSport 3.0	70	1386	1	1386	30	30	263	1	21	22	100
60	HH1MU43	PTA-3705 09/17/01	pCMVSport 3.0	188	725	1	725	12	12	381	1	21	22	100
60	HH1MU43	PTA-3705 09/17/01	pCMVSport 3.0	189	616	1	616		439	382	1	1	2	59
61	HHMNV67	PTA-3705 09/17/01	pSport1	71	813	176	793	233	233	264	1	20	21	151
61	HHMNV67	PTA-3705 09/17/01	pSport1	190	677	1	677	70	70	383	1	20	21	151
61	HHMNV67	PTA-3705 09/17/01	pSport1	191	835	176	835	233	233	384	1	20	21	151
62	HMTSU69	PTA-3705 09/17/01	pCMVSport 3.0	72	757	107	669	112	112	265	1	20	21	142
62	HMTSU69	PTA-3705 09/17/01	pCMVSport 3.0	192	713	1	713	17	17	385	1	20	21	142
62	HMTSU69	PTA-3705 09/17/01	pCMVSport 3.0	193	541	1	541	6	6	386	1	20	21	142
63	HMWCU24	PTA-3705 09/17/01	Uni-ZAP XR	73	1734	1	1734	148	148	266	1	18	19	450
63	HMWCU24	PTA-3705 09/17/01	Uni-ZAP XR	194	543	1	543	140	140	387	1	18	19	134
63	HMWCU24	PTA-3705 09/17/01	Uni-ZAP XR	195	1859	290	1859	176	176	388	1	18	19	450
63	HMWCU24	PTA-3705 09/17/01	Uni-ZAP XR	196	594	1	594		1	389	1	1	2	125
64	HCPCI91	PTA-3845 11/08/01	pCMVSport 3.0	74	1743	132	1743	401	401	267	1	30	31	266
65	HDMSA08	PTA-3845 11/08/01	pCMVSport 3.0	75	1404	702	1361		591	268	1	1	2	146

Gene No.	cDNA Clone ID	ATCC Deposit Nr and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
66	HCPBA16	PTA-3845 11/08/01	pCMVSport 3.0	76	1803	146	1803	134	134	269	1	28	29	263
67	HCPBM77	PTA-3845 11/08/01	pCMVSport 3.0	77	4165	2437	3065	52	52	270	1	23	24	950
68	HCPBR37	PTA-3845 11/08/01	pCMVSport 3.0	78	603	1	603	144	144	271	1	21	22	127
68	HCPBR37	PTA-3845 11/08/01	pCMVSport 3.0	197	651	1	651		2	390	1	1	2	75
69	HIEAG70	PTA-3845 11/08/01	pCMVSport 3.0	79	708	1	708	29	29	272	1	19	20	94
70	HDMTL77	PTA-3845 11/08/01	pCMVSport 3.0	80	2415	1	2415	316	316	273	1	21	22	312
71	HDMTP20	PTA-3845 11/08/01	pCMVSport 3.0	81	1230	71	1230	338	338	274	1	26	27	237
71	HDMTP20	PTA-3845 11/08/01	pCMVSport 3.0	198	1292	819	1292	30	30	391	1	1	2	321
72	HIEAP38	PTA-3845 11/08/01	pCMVSport 3.0	82	623	1	623	278	278	275	1	32	33	104
72	HIEAP38	PTA-3845 11/08/01	pCMVSport 3.0	199	4476	2189	2878		509	392	1	1	2	449
73	HIEBT86	PTA-3845 11/08/01	pCMVSport 3.0	83	638	1	638	296	296	276	1	34	35	82
74	HIGAN47	PTA-3845 11/08/01	pCMVSport 3.0	84	653	1	653	33	33	277	1	17	18	181
75	HDMSW74	PTA-3845 11/08/01	pCMVSport 3.0	85	928	26	928	244	244	278	1	28	29	90
76	HIGBG18	PTA-3845 11/08/01	pCMVSport 3.0	86	1141	1	1141	71	71	279	1	20	21	217
77	HDMTE62	PTA-3845 11/08/01	pCMVSport 3.0	87	1874	4	1874	90	90	280	1	21	22	89

Gene No.	cDNA Clone ID	ATCC Deposit Nr and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
77	HDMTE62	PTA-3845 11/08/01	pCMVSport 3.0	200	682	260	550		187	393	1	1	2	62
78	HCPRA19	PTA-3845 11/08/01	pCMVSport 3.0	88	751	1	751	52	52	281	1	42	43	233
78	HCPRA19	PTA-3845 11/08/01	pCMVSport 3.0	201	671	1	667		132	394	1	1	2	42
79	HCPCB26	PTA-3845 11/08/01	pCMVSport 3.0	89	1080	21	1080	279	279	282	1	23	24	150
80	HCPCN28	PTA-3845 11/08/01	pCMVSport 3.0	90	1587	25	1587	103	103	283	1	18	19	205
81	HABCP53	PTA-3845 11/08/2001	pCMVSport 3.0	91	716	87	686	96	96	284	1	18	19	86
82	HCPBO66	PTA-3845 11/08/2001	pCMVSport 3.0	92	1216	23	1216	119	119	285	1	28	29	245
82	HCPBO66	PTA-3845 11/08/2001	pCMVSport 3.0	202	1088	963	1025		142	395	1	1	2	193
83	HIGAT14	PTA-3845 11/08/2001	pCMVSport 3.0	93	542	1	542	30	30	286	1	17	18	112
84	HESYT64	PTA-3845 11/08/2001	pCMVSport 3.0	94	1199	1	1199	417	417	287	1	20	21	106
85	HALJC43	PTA-3845 11/08/2001	pSport1	95	844	1	516	276	276	288	1	25	26	63
86	HESZO72	PTA-3845 11/08/2001	pCMVSport 3.0	96	614	1	614	98	98	289	1	26	27	114
87	HESZV10	PTA-3845 11/08/2001	pCMVSport 3.0	97	628	1	628	115	115	290	1	18	19	123
88	HESYL64	PTA-3845 11/08/2001	pCMVSport 3.0	98	634	1	634	80	80	291	1	27	28	185
88	HESYL64	PTA-3845 11/08/2001	pCMVSport 3.0	203	838	197	838		196	396	1	1	2	186

Gene No.	cDNA Clone ID	ATCC Deposit Nr and Date	Vector	NT SEQ ID NO: X	Total NT Seq.	5' NT of Clone Seq.	3' NT of Clone Seq.	5' NT of Start Codon	5' NT of First AA of Signal Pep	AA SEQ ID NO: Y	First AA of Sig Pep	Last AA of Sig Pep	First AA of Secreted Portion	Last AA of ORF
89	HESYN37	PTA-3845 11/08/2001	pCMVSport 3.0	99	730	1	730	232	232	292	1	40	41	81

Description of Table 1B

Table 1B summarizes some of the polynucleotides encompassed by the invention (including cDNA clones related to the sequences (Clone ID:), contig sequences (contig identifier (Contig ID:) and contig nucleotide sequence identifiers (SEQ ID NO:X)) and further summarizes certain characteristics of these polynucleotides and the polypeptides encoded thereby.

The first column of Table 1B provide the gene numbers in the application for each clone identifier.

The second column of Table 1B provide unique clone identifiers, "Clone ID:", for cDNA clones related to each contig sequence disclosed in Table 1A and/or Table 1B. This Clone ID references the cDNA clone which contains at least the 5' most sequence of the assembled contig and at least a portion of SEQ ID NO:X as determined by directly sequencing the referenced clone. The referenced clone may have more sequence than described in the sequence listing or the clone may have less. In the vast majority of cases, however, the clone is believed to encode a full-length polypeptide. In the case where a clone is not full-length, a full-length cDNA can be obtained by methods described elsewhere herein.

The third column of Table 1B provide unique contig identifiers, "Contig ID:" for each of the contig sequences disclosed in these tables.

The fourth column of Table 1B provides the sequence identifiers, "SEQ ID NO:X", for each of the contig sequences disclosed in Table 1A and/or 1B.

The fifth column of Table 1B, "ORF (From-To)", provides the location (*i.e.*, nucleotide position numbers) within the polynucleotide sequence of SEQ ID NO:X that delineates the preferred open reading frame (ORF) that encodes the amino acid sequence shown in the sequence listing and referenced in Table 1B as SEQ ID NO:Y (column 6). Where the nucleotide position number "To" is lower than the nucleotide position number "From", the preferred ORF is the reverse complement of the referenced polynucleotide sequence.

The sixth column in Table 1B provides the corresponding SEQ ID NO:Y for the polypeptide sequence encoded by the preferred ORF delineated in column 5. In one embodiment, the invention provides an amino acid sequence comprising, or alternatively consisting of, a polypeptide encoded by the portion of SEQ ID NO:X delineated by "ORF (From-To)". Also provided are polynucleotides encoding such amino acid sequences and the

complementary strand thereto.

Column 7 of Table 1B lists residues comprising predicted epitopes contained in the polypeptides encoded by each of the preferred ORFs (SEQ ID NO:Y). Identification of potential immunogenic regions was performed according to the method of Jameson and Wolf (CABIOS, 4; 181-186 (1988)); specifically, the Genetics Computer Group (GCG) implementation of this algorithm, embodied in the program PEPTIDESTRUCTURE (Wisconsin Package v10.0, Genetics Computer Group (GCG), Madison, Wisc.) The Jameson-Wolf antigenic analysis was performed using the computer program PROTEAN (Version 3.11 for the Power MacIntosh, DNASTAR, Inc., 1228 South Park Street Madison, WI). This method returns a measure of the probability that a given residue is found on the surface of the protein. Regions where the antigenic index score is greater than 0.9 over at least 6 amino acids are indicated in Table 1B as "Predicted Epitopes". In particular embodiments, polypeptides of the invention comprise, or alternatively consist of, one, two, three, four, five or more of the predicted epitopes described in Table 1B. It will be appreciated that, depending on the analytical criteria used to predict antigenic determinants, the exact address of the determinant may vary slightly.

Column 8 of Table 1B provides an expression profile and library code:count for each of the contig sequences (SEQ ID NO:X) disclosed in Table 1B, which can routinely be combined with the information provided in Table 4 and used to determine the tissues, cells, and/or cell line libraries which predominantly express the polynucleotides of the invention. The first code number shown in Table 1B column 8 (preceding the colon), represents the tissue/cell source identifier code corresponding to the key provided in Table 4. Expression of these polynucleotides was not observed in the other tissues and/or cell libraries tested. The second number in column 8 (following the colon), represents the number of times a sequence corresponding to the reference polynucleotide sequence (*e.g.*, SEQ ID NO:X) was identified in the corresponding tissue/cell source. Utilizing this technology, cDNAs were amplified by PCR and then transferred, in duplicate, onto the array. Gene expression was assayed through hybridization of first strand cDNA probes to the DNA array. cDNA probes were generated from total RNA extracted from a variety of different tissues and cell lines. Probe synthesis was performed in the presence of ^{33}P dCTP, using oligo(dT) to prime reverse transcription. After hybridization, high stringency washing conditions were employed to remove non-specific hybrids from the array. The remaining signal, emanating from each gene target, was measured using a Phosphorimager. Gene expression was reported as Phosphor Stimulating

Luminescence (PSL) which reflects the level of phosphor signal generated from the probe hybridized to each of the gene targets represented on the array. A local background signal subtraction was performed before the total signal generated from each array was used to normalize gene expression between the different hybridizations. The value presented after "[array code]:" represents the mean of the duplicate values, following background subtraction and probe normalization. One of skill in the art could routinely use this information to identify normal and/or diseased tissue(s), which show a predominant expression pattern of the corresponding polynucleotide of the invention or to identify polynucleotides which show predominant and/or specific tissue and/or cell expression.

Column 9 of Table 1B ("Cytologic Band") provides a chromosomal location for certain polynucleotides corresponding to SEQ ID NO:X. Chromosomal location was determined by finding exact matches to EST and cDNA sequences contained in the NCBI (National Center for Biotechnology Information) UniGene database. Each sequence in the UniGene database is assigned to a "cluster"; all of the ESTs, cDNAs, and STSs in a cluster are believed to be derived from a single gene. Chromosomal mapping data is often available for one or more sequence(s) in a UniGene cluster; this data (if consistent) is then applied to the cluster as a whole. Thus, it is possible to infer the chromosomal location of a new polynucleotide sequence by determining its identity with a mapped UniGene cluster. A modified version of the computer program BLASTN (Altshul, *et al.*, J. Mol. Biol. 215:403-410 (1990), and Gish and States, Nat. Genet. 3:266-272) (1993) was used to search the UniGene database for EST or cDNA sequences that contain exact or near-exact matches to a polynucleotide sequence of the invention (the 'Query'). A sequence from the UniGene database (the 'Subject') was said to be an exact match if it contained a segment of 50 nucleotides in length such that 48 of those nucleotides were in the same order as found in the Query sequence. If all of the matches that met this criteria were in the same UniGene cluster, and mapping data was available for this cluster, it is indicated in Table 1B under the heading "Cytologic Band". Where a cluster had been further localized to a distinct cytologic band, that band is disclosed; where no banding information was available, but the gene had been localized to a single chromosome, the chromosome is disclosed.

Given a presumptive chromosomal location, disease locus association was determined by comparison with the Morbid Map, derived from Online Mendelian Inheritance in Man (Online Mendelian Inheritance in Man, OMIM™. McKusick-Nathans Institute for Genetic Medicine, Johns Hopkins University (Baltimore, MD) and National Center for Biotechnology

Information, National Library of Medicine (Bethesda, MD) 2000. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/). If the putative chromosomal location of the Query overlaps with the chromosomal location of a Morbid Map entry, an OMIM identification number is disclosed in Table 1B, column 10, labeled "OMIM Disease Reference(s)". A key to the OMIM reference identification numbers, as well as a description of the associated disease, are provided in Table 5.

Table 1B

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
1	HSMPG12	1292274	11	104 - 370	204	Ser-66 to Pro-84.	H0644: 2, H0575: 1, H0510: 1, L0769: 1, L0659: 1, H0726: 1 and L0777: 1.		
	HSMPG12	1292610	100	119 - 385	293	Ser-66 to Pro-84.			
2	HNLJK11	1289619	12	276 - 908	205	Ser-12 to Arg-17, Arg-202 to Ala-210.	S0438: 1		
	HNLJK11	1290053	101	305 - 937	294	Ser-12 to Arg-17, Arg-202 to Ala-210.			
3	HSMPJ30	1289642	13	143 - 643	206	Ser-16 to Lys-24, Thr-31 to Glu-49.	L0804: 1 and H0726: 1.		
	HSMPJ30	1292609	102	156 - 1253	295	Ser-16 to Lys-24, Thr-31 to Glu-49, Pro-253 to Asp-262, Arg-346 to Gln-358.			
	HSMPJ30	1289183	103	155 - 451	296	His-6 to Gln-15, Pro-22 to Gln-30, Lys-58 to Val-81.			
4	HTAOK88	1312306	14	85 - 675	207		L0777: 8, L0766: 7, L0741: 7, L0439: 7, L0748: 5, L0754: 5, L0744: 4, L0757: 4, S0192: 4, H0677: 4, H0556: 3, S0360: 3, S0410: 3, H0013: 3, H0052: 3, L0769: 3, L0775: 3, L0776: 3, L0756: 3, L0752: 3, L0604: 3, H0265: 2, S0040: 2, H0599: 2, H0545: 2, H0266: 2, H0030: 2, H0617:		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							2, H0135: 2, L0771: 2, L0662: 2, L0806: 2, L0805: 2, L0659: 2, L0666: 2, L0665: 2, H0520: 2, H0547: 2, H0519: 2, H0659: 2, S0404: 2, L0743: 2, L0758: 2, L0596: 2, L0605: 2, L0485: 2, H0739: 1, H0171: 1, H0713: 1, S0134: 1, S0218: 1, H0657: 1, H0656: 1, S0212: 1, H0663: 1, S0420: 1, S0408: 1, H0742: 1, S0132: 1, S0476: 1, H0393: 1, H0587: 1, T0040: 1, T0060: 1, H0575: 1, H0309: 1, H0009: 1, L0471: 1, H0620: 1, H0510: 1, H0290: 1, S0250: 1, S0022: 1, T0023: 1, L0055: 1, H0634: 1, H0488: 1, H0268: 1, T0041: 1, T0042: 1, H0538: 1, S0210: 1, L0763: 1, L0639: 1, L0764: 1, L0794: 1, L0649: 1, L0804: 1, L0650: 1, L0774: 1, L0809: 1, L5622: 1, L5623: 1, L0793: 1, L0664: 1, H0144: 1, H0593: 1, S0122: 1, H0435: 1, H0521: 1, S0406: 1, H0555: 1, L0740: 1, L0747: 1, L0749: 1,		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							L0779: 1, L0731: 1, L0759: 1, S0031: 1, S0434: 1, S0436: 1, L0601: 1, S0106: 1, H0665: 1, H0667: 1 and S0276: 1.		
	HTAOK88	1293280	104	97 - 687	297	Phe-166 to Arg-174, Ser-191 to Tyr-196.	L0777: 8, L0766: 7, L0741: 7, L0439: 7, L0748: 5, L0754: 5, L0744: 4, L0757: 4, S0192: 4, H0677: 4, H0556: 3, S0360: 3, S0410: 3, H0013: 3, H0052: 3, L0769: 3, L0775: 3, L0776: 3, L0756: 3, L0752: 3, L0604: 3, H0265: 2, S0040: 2, H0599: 2, H0545: 2, H0266: 2, H0030: 2, H0617: 2, H0135: 2, L0771: 2, L0662: 2, L0806: 2, L0805: 2, L0659: 2, L0666: 2, L0665: 2, H0520: 2, H0547: 2, H0519: 2, H0659: 2, S0404: 2, L0743: 2, L0758: 2, L0596: 2, L0605: 2, L0485: 2, H0739: 1, H0171: 1, H0713: 1, S0134: 1, S0218: 1, H0657: 1, H0656: 1, S0212: 1, H0663: 1, S0420: 1, S0408: 1, H0742: 1, S0132: 1, S0476: 1, H0393: 1, H0587: 1, T0040: 1, T0060: 1, H0575: 1,		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							H0309: 1, H0009: 1, L0471: 1, H0620: 1, H0510: 1, H0290: 1, S0250: 1, S0022: 1, T0023: 1, L0055: 1, H0634: 1, H0488: 1, H0268: 1, T0041: 1, T0042: 1, H0538: 1, S0210: 1, L0763: 1, L0639: 1, L0764: 1, L0794: 1, L0649: 1, L0804: 1, L0650: 1, L0774: 1, L0809: 1, L5622: 1, L5623: 1, L0793: 1, L0664: 1, H0144: 1, H0593: 1, S0122: 1, H0435: 1, H0521: 1, S0406: 1, H0555: 1, L0740: 1, L0747: 1, L0749: 1, L0779: 1, L0731: 1, L0759: 1, S0031: 1, S0434: 1, S0436: 1, L0601: 1, S0106: 1, H0665: 1, H0667: 1 and S0276: 1.		
	HTAOK88	1297164	105	478 - 1068	298	Phe-166 to Arg-174, Ser-191 to Tyr-196.			
5	HDSIX96	1303148	15	91 - 345	208		H0728: 1		
	HDSIX96	1289651	106	91 - 345	299		H0728: 1		
	HDSIX96	1290008	107	103 - 357	300				
	HDSIX96	1290003	108	103 - 357	301				
	HDSIX96	1289164	109	39 - 179	302				
6	HATYJ68	1332728	16	104 - 1306	209		S0410: 13, L0777: 12, L0748: 9, T0060: 6, H0553: 4, H0672: 3, L0439: 3,		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							L0749: 3, S0436: 3, S0134: 2, H0661: 2, S0376: 2, S0278: 2, H0575: 2, S0003: 2, S0022: 2, H0674: 2, S0440: 2, L0646: 2, L0662: 2, L0809: 2, L0740: 2, L0754: 2, L0755: 2, L0758: 2, S0434: 2, H0506: 2, H0716: 1, T0049: 1, H0657: 1, H0656: 1, S0358: 1, S0468: 1, H0437: 1, S6022: 1, H0574: 1, H0632: 1, H0250: 1, H0427: 1, S0280: 1, H0156: 1, L0021: 1, H0620: 1, H0594: 1, S0214: 1, H0622: 1, H0169: 1, H0135: 1, H0038: 1, H0634: 1, H0268: 1, H0623: 1, S0015: 1, S0438: 1, H0641: 1, H0646: 1, S0142: 1, S0344: 1, H0695: 1, L0598: 1, L0763: 1, L0769: 1, L0637: 1, L0667: 1, L0641: 1, L0764: 1, L0768: 1, L0806: 1, L0653: 1, L0655: 1, L0657: 1, L5623: 1, L0663: 1, L0665: 1, H0144: 1, H0702: 1, H0703: 1, H0519: 1, H0593: 1, S0330: 1, H0518: 1, H0521: 1, H0555: 1, L0779: 1, H0445: 1,		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							H0543: 1 and H0423: 1.		
	HATYJ68	1296680	110	91 - 1293	303	Ala-2 to Glu-7, Glu-60 to Gly-72, Asn-139 to Gly-144, Gln-237 to Lys-244, Pro-330 to Pro-340, Pro-349 to Ser-361, Ser-363 to Cys-371, Pro-373 to Glu-381, Gly-389 to Gly-397.	S0410: 13, L0777: 12, L0748: 9, T0060: 6, H0553: 4, H0672: 3, L0439: 3, L0749: 3, S0436: 3, S0134: 2, H0661: 2, S0376: 2, S0278: 2, H0575: 2, S0003: 2, S0022: 2, H0674: 2, S0440: 2, L0646: 2, L0662: 2, L0809: 2, L0740: 2, L0754: 2, L0755: 2, L0758: 2, S0434: 2, H0506: 2, H0716: 1, T0049: 1, H0657: 1, H0656: 1, S0358: 1, S0468: 1, H0437: 1, S6022: 1, H0574: 1, H0632: 1, H0250: 1, H0427: 1, S0280: 1, H0156: 1, L0021: 1, H0620: 1, H0594: 1, S0214: 1, H0622: 1, H0169: 1, H0135: 1, H0038: 1, H0634: 1, H0268: 1, H0623: 1, S0015: 1, S0438: 1, H0641: 1, H0646: 1, S0142: 1, S0344: 1, H0695: 1, L0598: 1, L0763: 1, L0769: 1, L0637: 1, L0667: 1, L0641: 1, L0764: 1, L0768: 1, L0806: 1, L0653: 1, L0655: 1, L0657: 1, L5623: 1, L0663: 1, L0665: 1, H0144: 1,		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							H0702: 1, H0703: 1, H0519: 1, H0593: 1, S0330: 1, H0518: 1, H0521: 1, H0555: 1, L0779: 1, H0445: 1, H0543: 1 and H0423: 1.		
	HATYJ68	1296903	111	104 - 1306	304	Ala-2 to Glu-7, Glu-60 to Gly-72, Asn-139 to Gly-144, Gln-237 to Lys-244, Pro-330 to Pro-340, Pro-349 to Ser-361, Ser-363 to Cys-371, Pro-373 to Glu-381, Gly-389 to Gly-397.			
7	HDSJH26	1326515	17	129 - 506	210		H0728: 1		
	HDSJH26	1291039	112	130 - 507	305	Ser-39 to Asn-44.	H0728: 1		
	HDSJH26	1291041	113	119 - 496	306	Ser-39 to Asn-44.			
	HDSJH26	1291040	114	85 - 282	307				
8	HNMIG09	1299005	18	176 - 1060	211	Thr-35 to Gly-46, Asn-66 to Glu-73, Glu-203 to Gly-211, Cys-279 to Asp-294.	H0599: 1, H0052: 1, T0006: 1, S0366: 1, H0732: 1, L0753: 1 and L0757: 1.		
	HNMIG09	1299037	115	149 - 1033	308	Thr-35 to Gly-46, Asn-66 to Glu-73, Glu-203 to Gly-211, Cys-279 to Asp-294.			
9	HLCMJ69	1299006	19	88 - 939	212		L0794: 6, H0545: 4, L0777: 4, L0659: 3, S0126: 3, H0662: 2, L0717: 2, H0150: 2, H0041: 2, S0250: 2,		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							H0252: 2, H0628: 2, L0803: 2, L0805: 2, L0747: 2, L0750: 2, H0381: 1, S0358: 1, H0586: 1, H0485: 1, H0486: 1, L0021: 1, H0251: 1, H0544: 1, H0284: 1, L0770: 1, L0769: 1, L0772: 1, L0641: 1, L0787: 1, L0751: 1, L0749: 1, L0779: 1, L0759: 1, S0011: 1 and S0192: 1.		
	HLCMJ69	1299048	116	76 - 927	309				
10	HNMIB80	1299275	20	465 - 1655	213	Ala-3 to Gly-8, Pro-41 to Val-46, Pro-74 to Gln-84, Lys-187 to His-193, Pro-243 to Glu-249, Glu-258 to Ser-271, Glu-291 to Gly-296, Asp-309 to Asp-315, Asp-362 to Ser-369, Ile-385 to Asp-396.	H0706: 8, H0708: 7, H0735: 6, S0366: 5, S0364: 4, L0485: 4, L0604: 4, H0733: 3, L0777: 3, H0734: 2, L0623: 2, S0362: 2, H0373: 2, H0743: 2, L0520: 2, H0725: 2, L0747: 2, H0624: 1, H0729: 1, H0728: 1, H0619: 1, H0550: 1, H0196: 1, L0646: 1, L0809: 1, H0693: 1, S0328: 1, H0214: 1 and H0732: 1.		
11	HDLLA60	1294672	21	117 - 2135	214	Glu-34 to Gly-48, Pro-51 to Gly-59, Pro-91 to Val-96, Arg-119 to Arg-134, His-236 to His-245, Thr-282 to Ser-290, Gly-351 to Ser-358,	H0724: 5, H0722: 3, L0665: 3, H0741: 2, S0132: 2, L0439: 2, L0596: 2, H0542: 2, H0543: 2, S0114: 1, S0116: 1, S0420: 1, H0614: 1, H0587: 1, S0280: 1, H0253: 1, H0581: 1, H0457:		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
						Thr-485 to Gly-490, Gln-550 to Ala-563, Arg-568 to Pro-575	1, H0012: 1, H0083: 1, H0687: 1, H0622: 1, H0135: 1, L0796: 1, L5565: 1, L0646: 1, L0643: 1, L0764: 1, L0773: 1, L0649: 1, L0659: 1, L0809: 1, L0663: 1, L0438: 1, H0555: 1, H0478: 1, L0752: 1, L0599: 1 and H0506: 1.		
	HDLLA60	1299173	117	268 - 2286	310	Glu-34 to Gly-48, Pro-51 to Gly-59, Pro-91 to Val-96, Arg-119 to Arg-134, His-236 to His-245, Thr-282 to Ser-290, Gly-351 to Ser-358, Thr-485 to Gly-490, Gln-550 to Ala-563,			
	HDLLA60	1299172	118	1142 - 1174	311	Glu-34 to Gly-48, Pro-51 to Gly-59, Pro-91 to Val-96, Arg-119 to Arg-134, His-236 to His-245, Thr-282 to Ser-290, Gly-351 to Ser-358, Thr-485 to Gly-490, Gln-550 to Ala-563, Arg-568 to Pro-575.			
12	HDSIX56	1320236	22	33 - 515	215	Glu-54 to Lys-59, Arg-74 to Lys-81.	H0637: 1 and H0728: 1.		
	HDSIX56	1291032	119	22 - 504	312	Glu-54 to Lys-59,			

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
						Arg-74 to Lys-81.			
	HDSIX56	1291035	120	33 - 515	313	Glu-54 to Lys-59, Arg-74 to Lys-81.			
13	HFLEZ28	1326771	23	160 - 807	216		H0040: 4, H0730: 1, H0421: 1, L0645: 1 and H0727: 1.		
	HFLEZ28	1290037	121	171 - 818	314	Glu-4 to Lys-9, His-44 to Gly-54, Glu-69 to Lys-74, Ala-76 to Asn-82, Ala-90 to Cys-95, Leu-99 to Ser-113, Arg-146 to Trp-156, Thr-160 to Phe-168, Lys-171 to Glu-180, Asn-188 to Asn-195.	H0040: 4, H0730: 1, H0421: 1, L0645: 1 and H0727: 1.		
	HFLEZ28	1290307	122	160 - 807	315	Glu-4 to Lys-9, His-44 to Gly-54, Glu-69 to Lys-74, Ala-76 to Asn-82, Ala-90 to Cys-95, Leu-99 to Ser-113, Arg-146 to Trp-156, Thr-160 to Phe-168, Lys-171 to Glu-180, Asn-188 to Asn-195.			
	HFLEZ28	1290045	123	188 - 835	316	Glu-4 to Lys-9, His-44 to Gly-54, Glu-69 to Lys-74, Ala-76 to Asn-82, Ala-90 to Cys-95, Leu-99 to Ser-113,			

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
						Arg-146 to Trp-156, Thr-160 to Phe-168, Lys-171 to Glu-180, Asn-188 to Asn-195			
14	HDMSA74	1336632	24	208 - 1815	217		S0250: 3, S0418: 1, H0734: 1, T0040: 1, H0413: 1 and H0756: 1.		
	HDMSA74	1306175	124	208 - 621	317		S0250: 3, S0418: 1, H0734: 1, T0040: 1, H0413: 1 and H0756: 1.		
	HDMSA74	1306392	125	2 - 169	318				
15	HDMSQ09	1335780	25	108 - 1052	218		H0734: 5, S0360: 2, H0052: 2, S0366: 2, L0502: 2, S0400: 1, H0729: 1, H0733: 1, L0623: 1, H0156: 1, H0122: 1, H0706: 1, H0424: 1, H0617: 1, S0036: 1, H0396: 1, H0547: 1, H0660: 1 and H0666: 1.		
	HDMSQ09	1305924	126	92 - 784	319	Ala-25 to Thr-30.	H0734: 5, S0360: 2, H0052: 2, S0366: 2, L0502: 2, S0400: 1, H0729: 1, H0733: 1, L0623: 1, H0156: 1, H0122: 1, H0706: 1, H0424: 1, H0617: 1, S0036: 1, H0396: 1, H0547: 1, H0660: 1 and H0666: 1.		
	HDMSQ09	1306396	127	113 - 547	320	Gly-1 to Pro-14, Pro-70 to Pro-75, Gln-122 to Arg-129.			
16	HDMTG72	1322802	26	46 - 339	219		L0622: 25, H0708: 19,		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							L0163: 14, H0733: 12, L0604: 10, H0735: 8, H0729: 7, L0623: 6, H0732: 5, H0728: 4, H0743: 4, L0777: 4, S0366: 3, H0734: 2, H0725: 2, H0101: 1, H0097: 1, H0599: 1, H0706: 1, H0196: 1, H0251: 1, H0200: 1, H0373: 1, H0424: 1, S0364: 1, L0783: 1, L0809: 1, S0392: 1, L0747: 1 and L0779: 1.		
	HDMTG72	1305913	128	93 - 386	321	Ser-47 to Gln-63, Leu-65 to Asn-78, Pro-91 to Pro-97.	L0622: 25, H0708: 19, L0163: 14, H0733: 12, L0604: 10, H0735: 8, H0729: 7, L0623: 6, H0732: 5, H0728: 4, H0743: 4, L0777: 4, S0366: 3, H0734: 2, H0725: 2, H0101: 1, H0097: 1, H0599: 1, H0706: 1, H0196: 1, H0251: 1, H0200: 1, H0373: 1, H0424: 1, S0364: 1, L0783: 1, L0809: 1, S0392: 1, L0747: 1 and L0779: 1.	16p	
17	HTAOQ18	1306268	27	88 - 744	220	Pro-59 to Gly-65, Arg-83 to Asp-89, Ala-142 to Tyr-151, Leu-191 to Asp-198.	H0739: 187, H0743: 14, S0410: 4, L0803: 4, L0809: 4, L0794: 3, L0775: 3, H0341: 1, S0444: 1, H0617: 1, H0606: 1, L0773: 1, L0766: 1, L0499: 1, L0804:		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							1, L0657: 1, L0783: 1, H0696: 1, H0627: 1, S0028: 1 and L0596: 1.		
	HTAOQ18	1306691	129	100 - 756	322	Pro-59 to Gly-65, Arg-83 to Asp-89, Ala-142 to Tyr-151, Leu-191 to Asp-198.			
18	HLAPM62	1322803	28	213 - 464	221		H0740: 2		
	HLAPM62	1306348	130	197 - 448	323				
19	HDLWY45	1336616	29	108 - 2126	222		H0724: 5, H0722: 4, L0665: 3, H0741: 2, S0132: 2, L0438: 2, L0439: 2, L0596: 2, H0542: 2, H0543: 2, S0114: 1, S0116: 1, H0614: 1, H0587: 1, S0280: 1, H0253: 1, H0581: 1, H0457: 1, H0012: 1, H0083: 1, H0687: 1, H0622: 1, H0135: 1, L0796: 1, L5565: 1, L0646: 1, L0643: 1, L0764: 1, L0773: 1, L0649: 1, L0659: 1, L0809: 1, L5622: 1, L0663: 1, H0555: 1, H0478: 1, L0752: 1, L0599: 1 and H0506: 1.		
	HDLWY45	1307490	131	268 - 2286	324	Glu-34 to Gly-48, Pro-51 to Gly-59, Pro-91 to Val-96, Arg-119 to Arg-134, His-236 to His-245, Thr-282 to Ser-290,	H0724: 5, H0722: 4, L0665: 3, H0741: 2, S0132: 2, L0438: 2, L0439: 2, L0596: 2, H0542: 2, H0543: 2, S0114: 1, S0116: 1, H0614: 1, H0587: 1, S0280: 1,		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
						Gly-351 to Ser-358, Thr-485 to Gly-490, Gln-550 to Ala-563, Arg-568 to Pro-575.	H0253: 1, H0581: 1, H0457: 1, H0012: 1, H0083: 1, H0687: 1, H0622: 1, H0135: 1, L0796: 1, L5565: 1, L0646: 1, L0643: 1, L0764: 1, L0773: 1, L0649: 1, L0659: 1, L0809: 1, L5622: 1, L0663: 1, H0555: 1, H0478: 1, L0752: 1, L0599: 1 and H0506: 1.		
	HDLWY45	1307489	132	25 - 129	325				
20	HDMKF05	1322800	30	27 - 356	223		L0623: 2, L0805: 2, L0759: 2, H0733: 1, L0622: 1, H0018: 1, S0364: 1, L0809: 1 and L0779: 1.		
	HDMKF05	1306388	133	93 - 422	326	Arg-47 to Ser-57, Asn-64 to Asn-69, Pro-71 to Val-78.	L0623: 2, L0759: 2, H0733: 1, L0622: 1, H0018: 1, S0364: 1, L0805: 1, L0809: 1 and L0779: 1.		
21	HDMRQ63	1305906	31	129 - 401	224	Pro-3 to Met-10, Arg-43 to Arg-59, Pro-64 to Ser-77.	H0734: 1		
	HDMRQ63	1306389	134	137 - 385	327				
22	HDMKE89	1335778	32	121 - 1116	225		L0754: 10, L0747: 6, L0766: 5, L0755: 5, L0761: 4, L0803: 4, L0731: 4, H0556: 3, L0769: 3, L0783: 3, S0152: 3, L0744: 3, H0609: 2, H0586: 2, H0617: 2, T0042: 2, L0369: 2, L0800: 2, L0775: 2, L0806:		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							2, L0807: 2, L0789: 2, L0743: 2, L0596: 2, L0603: 2, H0265: 1, H0484: 1, H0254: 1, H0733: 1, H0619: 1, H0592: 1, H0318: 1, H0050: 1, H0012: 1, H0551: 1, S0038: 1, S0372: 1, S0150: 1, L0763: 1, L0770: 1, L4747: 1, L0637: 1, L0772: 1, L0662: 1, L0794: 1, L0804: 1, L0774: 1, L0776: 1, L0659: 1, L0809: 1, L0790: 1, H0672: 1, L0750: 1, L0779: 1, L0780: 1, L0752: 1, L0753: 1, L0758: 1, L0759: 1, S0436: 1 and S0424: 1.		
	HDMKE89	1306400	135	134 - 1129	328	Phe-184 to Lys-197, Glu-213 to Gly-220, Asp-289 to Pro-296, Pro-298 to Glu-304, Ser-323 to Arg-331.	L0754: 10, L0747: 6, L0766: 5, L0755: 5, L0761: 4, L0803: 4, L0731: 4, H0556: 3, L0769: 3, L0783: 3, S0152: 3, L0744: 3, H0609: 2, H0586: 2, H0617: 2, T0042: 2, L0369: 2, L0800: 2, L0775: 2, L0806: 2, L0807: 2, L0789: 2, L0743: 2, L0596: 2, L0603: 2, H0265: 1, H0484: 1, H0254: 1, H0733: 1, H0619: 1, H0592: 1, H0318: 1, H0050: 1, H0012: 1, H0551:		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							1, S0038: 1, S0372: 1, S0150: 1, L0763: 1, L0770: 1, L4747: 1, L0637: 1, L0772: 1, L0662: 1, L0794: 1, L0804: 1, L0774: 1, L0776: 1, L0659: 1, L0809: 1, L0790: 1, H0672: 1, L0750: 1, L0779: 1, L0780: 1, L0752: 1, L0753: 1, L0758: 1, L0759: 1, S0436: 1 and S0424: 1.		
23	HNMIK76	1335784	33	95 - 412	226		H0732: 3, L0518: 2, H0735: 1 and H0196: 1.		
	HNMIK76	1306246	136	78 - 395	329	Asp-23 to Cys-30, Pro-48 to Arg-53, Gln-64 to Lys-71, Phe-87 to Arg-94.	H0732: 3, L0518: 2, H0735: 1 and H0196: 1.		
24	HDHMA62	1322683	34	197 - 466	227		L3905: 2, S0030: 1, H0572: 1, T0010: 1, L0435: 1 and L0439: 1.		
	HDHMA62	1305882	137	736 - 1005	330	Gln-43 to Phe-49.	L3905: 2, S0030: 1, H0572: 1, T0010: 1, L0435: 1 and L0439: 1.		
	HDHMA62	1306218	138	2 - 148	331				
25	HDQDT24	1333991	35	62 - 679	228		H0521: 7, L0665: 4, H0638: 3, H0658: 3, H0255: 2, H0250: 2, H0618: 2, L0804: 2, L0779: 2, H0542: 2, H0663: 1, S0046: 1, H0617: 1, H0560: 1, H0641: 1, S0422: 1, S0426: 1, H0695:		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							1, L0655: 1, H0689: 1, H0435: 1, H0522: 1, H0555: 1, H0543: 1, H0423: 1 and H0506: 1.		
	HDQDT24	1306219	139	62 - 679	332	Gln-22 to Gln-44, Ala-90 to Gly-95, Gln-118 to Gln-125, Gly-147 to Glu-152, Leu-182 to Gly-197, Gln-199 to Val-205.	H0521: 7, L0665: 4, H0638: 3, H0658: 3, H0255: 2, H0250: 2, H0618: 2, L0804: 2, L0779: 2, H0542: 2, H0663: 1, S0046: 1, H0617: 1, H0560: 1, H0641: 1, S0422: 1, S0426: 1, H0695: 1, L0655: 1, H0689: 1, H0435: 1, H0522: 1, H0555: 1, H0543: 1, H0423: 1 and H0506: 1.		
	HDQDT24	1306221	140	2 - 1669	333	Asp-1 to Arg-10, Gln-48 to Gln-70, Ala-79 to Gly-84.			
	HDQDT24	1306220	141	109 - 627	334	Gln-22 to Gln-44, Ala-90 to Gly-95, Lys-137 to Trp-146.			
26	HEOOV77	1318709	36	68 - 2161	229		H0747: 5, H0749: 5, H0521: 5, H0457: 2, T0071: 1, H0264: 1, L0794: 1, L0804: 1, L0659: 1, H0522: 1 and S0404: 1.		
	HEOOV77	812736	142	52 - 435	335	Pro-46 to Gly-52, Asn-76 to Arg-89.	AR241: 20, AR194: 13, AR313: 13, AR206: 12, AR244: 12, AR192: 12, AR202: 11, AR248: 10, AR265: 10, AR198: 10,		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							AR096: 10, AR310: 9, AR263: 9, AR207: 9, AR243: 8, AR183: 8, AR269: 8, AR039: 8, AR182: 8, AR299: 8, AR052: 8, AR270: 7, AR247: 7, AR292: 7, AR089: 7, AR186: 7, AR161: 7, AR033: 7, AR213: 7, AR284: 7, AR184: 7, AR162: 7, AR173: 7, AR264: 7, AR252: 7, AR163: 7, AR300: 7, AR293: 7, AR282: 7, AR229: 7, AR312: 7, AR316: 7, AR104: 6, AR273: 6, AR277: 6, AR240: 6, AR271: 6, AR285: 6, AR246: 6, AR296: 6, AR219: 6, AR298: 6, AR235: 6, AR180: 6, AR185: 6, AR218: 6, AR250: 6, AR253: 6, AR053: 6, AR195: 6, AR175: 6, AR165: 6, AR268: 6, AR238: 6, AR245: 6, AR226: 6, AR258: 5, AR251: 5, AR290: 5, AR164: 5, AR166: 5, AR212: 5,		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							AR259: 5, AR205: 5, AR196: 5, AR289: 5, AR266: 5, AR283: 5, AR176: 5, AR177: 5, AR291: 5, AR223: 5, AR257: 5, AR197: 5, AR294: 5, AR295: 5, AR234: 5, AR288: 5, AR222: 5, AR193: 5, AR174: 4, AR286: 4, AR267: 4, AR204: 4, AR242: 4, AR178: 4, AR297: 4, AR221: 4, AR224: 4, AR275: 4, AR309: 4, AR262: 4, AR274: 4, AR236: 4, AR287: 4, AR311: 4, AR249: 4, AR170: 4, AR179: 4, AR060: 4, AR199: 4, AR261: 4, AR231: 4, AR210: 4, AR181: 3, AR168: 3, AR308: 3, AR216: 3, AR237: 3, AR189: 3, AR233: 3, AR232: 3, AR191: 3, AR260: 3, AR227: 3, AR272: 3, AR203: 3, AR171: 3, AR255: 3, AR200: 3, AR201: 3, AR211: 3, AR230: 3, AR214: 3,		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							AR055: 3, AR217: 3, AR172: 2, AR256: 2, AR061: 2, AR225: 2, AR228: 2, AR239: 2, AR169: 1, AR188: 1 H0747: 5, H0749: 5, H0521: 5, H0457: 2, T0071: 1, H0264: 1, L0794: 1, L0804: 1, L0659: 1, H0522: 1 and S0404: 1.		
	HEOOV77	1306137	143	115 - 1155	336	Pro-46 to Gly-52, Asn-76 to Val-82, Ser-85 to Phe-90, Gly-94 to Asn-100, Gln-111 to Tyr-116, Cys-173 to Ser-179, Gln-188 to Ser-195, Pro-204 to Leu-213, Ser-246 to Pro-251.			
	HEOOV77	993277	144	3 - 2132	337	Pro-59 to Gly-65, Asn-89 to Val-95, Ser-98 to Phe-103, Gly-107 to Asn-113, Gln-124 to Tyr-129, Cys-186 to Ser-192, Gln-201 to Ser-208, Pro-217 to Leu-226, Ser-259 to Asn-273, Ser-311 to Arg-317, Gly-329 to Tyr-334, Ala-338 to Arg-347,			

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
						Ser-397 to Arg-402, Ser-404 to Gln-410, Pro-414 to Asp-419, Glu-497 to Asp-503, Pro-588 to His-604, Ala-621 to Pro-636, Gly-640 to Gln-653, Pro-660 to Glu-677, Gly-687 to Ala-694, Met-696 to Ala-702.			
27	HERHG93	1332320	37	193 - 633	230		L0731: 4, L0759: 4, L0809: 3, L0777: 3, S0212: 2, L3649: 2, H0748: 2, L0803: 2, L0789: 2, H0519: 2, H0624: 1, S0040: 1, S0180: 1, H0580: 1, L3387: 1, H0586: 1, H0497: 1, T0040: 1, L3653: 1, H0599: 1, T0082: 1, S0312: 1, S0314: 1, H0598: 1, H0551: 1, S0386: 1, H0494: 1, S0150: 1, L0761: 1, L0764: 1, L0794: 1, L0804: 1, L0783: 1, L3824: 1, H0547: 1, S0380: 1, S0152: 1, L0754: 1, L0749: 1 and L0755: 1.		
	HERHG93	1306990	145	193 - 633	338	Ala-24 to Pro-29, Asp-42 to Glu-50, Asp-81 to Asn-86, Lys-102 to Gln-108, Arg-126 to Tyr-135.	L0731: 4, L0759: 4, L0809: 3, L0777: 3, S0212: 2, L3649: 2, H0748: 2, L0803: 2, L0789: 2, H0519: 2, H0624: 1, S0040: 1, S0180:		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							1, H0580: 1, L3387: 1, H0586: 1, H0497: 1, T0040: 1, L3653: 1, H0599: 1, T0082: 1, S0312: 1, S0314: 1, H0598: 1, H0551: 1, S0386: 1, H0494: 1, S0150: 1, L0761: 1, L0764: 1, L0794: 1, L0804: 1, L0783: 1, L3824: 1, H0547: 1, S0380: 1, S0152: 1, L0754: 1, L0749: 1 and L0755: 1.		
28	HESXG41	1306380	38	97 - 429	231	Arg-37 to Glu-42, Gln-94 to Pro-103.	H0749: 1		
	HESXG41	1306690	146	108 - 440	339	Arg-37 to Glu-42, Gln-94 to Pro-103.			
29	HFKFO58	1306612	39	49 - 555	232	Met-1 to Arg-7, Glu-61 to Gly-68, Ala-92 to Glu-102, Glu-123 to Asn-129, Asp-138 to Ser-149	H0617: 14, L0665: 14, L0657: 11, H0682: 11, H0521: 10, S0360: 8, H0423: 7, H0740: 5, H0657: 5, H0620: 5, H0687: 5, L0664: 5, H0547: 5, S0406: 5, S0376: 4, H0059: 4, H0641: 4, S0422: 4, L0648: 4, L0768: 4, H0658: 4, H0670: 4, H0666: 4, H0522: 4, H0584: 3, H0713: 3, H0716: 3, H0341: 3, H0638: 3, H0618: 3, H0039: 3, H0087: 3, H0509: 3, L0662: 3, L0775: 3, L0659: 3, H0689: 3, H0435: 3, S0328: 3,		108725, 120700, 133171, 143890, 147670, 147670, 147670, 151440, 164953, 231670, 600276, 600957, 601843

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							H0445: 3, S0434: 3, L0581: 3, L0361: 3, H0585: 2, H0717: 2, T0049: 2, H0730: 2, S0476: 2, S0278: 2, H0550: 2, H0586: 2, H0559: 2, H0486: 2, H0575: 2, H0253: 2, H0581: 2, H0622: 2, H0606: 2, H0625: 2, H0649: 2, L0667: 2, L0523: 2, L0382: 2, L3811: 2, L3826: 2, H0684: 2, L0743: 2, L0751: 2, L0599: 2, S0026: 2, H0543: 2, S0424: 2, H0171: 1, H0556: 1, L3643: 1, S0040: 1, H0650: 1, H0254: 1, H0255: 1, H0661: 1, H0663: 1, H0664: 1, H0761: 1, H0125: 1, S0356: 1, S0442: 1, S0354: 1, S0358: 1, S0408: 1, H0722: 1, H0747: 1, S0132: 1, S6026: 1, H0587: 1, L0623: 1, H0250: 1, L0021: 1, H0599: 1, T0082: 1, H0318: 1, S0474: 1, H0327: 1, H0530: 1, H0150: 1, L0471: 1, H0012: 1, H0023: 1, H0024: 1, H0014: 1, S0388: 1, H0071: 1, H0107: 1, H0275: 1, H0354: 1, H0510: 1, H0247: 1, H0271: 1,		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							H0286: 1, H0615: 1, H0688: 1, H0553: 1, H0181: 1, H0124: 1, H0316: 1, H0477: 1, H0100: 1, H0561: 1, S0450: 1, S0438: 1, H0529: 1, L0371: 1, L0769: 1, L5575: 1, L0761: 1, L0772: 1, L0646: 1, L0645: 1, L0766: 1, L0774: 1, L0375: 1, L0651: 1, L0806: 1, L0658: 1, L0559: 1, L0783: 1, L0384: 1, L0793: 1, H0698: 1, H0765: 1, H0726: 1, H0519: 1, H0683: 1, H0660: 1, S0330: 1, H0754: 1, S0454: 1, H0696: 1, S0146: 1, H0576: 1, H0727: 1, H0732: 1, S0027: 1, S0031: 1, L0596: 1, H0542: 1, H0422: 1, S0456: 1 and H0352: 1.		
	HFKFO58	1313088	147	179 - 685	340	Met-1 to Arg-7, Glu-61 to Gly-68, Ala-92 to Glu-102, Glu-123 to Asn-129, Asp-138 to Ser-149.			
30	HFPKB52	1323767	40	31 - 591	233		S0196: 4, L0766: 3, S0380: 3, L0757: 3, S0358: 2, S0222: 2, S0474: 2, S0422: 2, H0658: 2, H0436: 2, L0362: 2, S0242: 2, H0556: 1,		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							H0717: 1, S6024: 1, H0484: 1, S0420: 1, L0005: 1, H0393: 1, L0717: 1, H0549: 1, L0623: 1, H0635: 1, H0052: 1, H0596: 1, S0025: 1, H0328: 1, H0622: 1, T0006: 1, H0272: 1, S0344: 1, S0426: 1, L0771: 1, L0774: 1, L0382: 1, L0809: 1, H0689: 1, H0684: 1, H0659: 1, H0648: 1, H0672: 1, H0518: 1, H0521: 1, S0027: 1, L0744: 1, L0754: 1, L0745: 1, L0747: 1, L0780: 1, L0753: 1, L0758: 1, L0759: 1, S0436: 1, L0592: 1, L0608: 1, S0026: 1, H0543: 1, H0423: 1 and H0422: 1.		
	HFPKB52	1307137	148	45 - 728	341	Tyr-56 to Lys-65, Gln-93 to Phe-100, Ser-104 to His-110, Glu-168 to Arg-194.	S0196: 4, L0766: 3, S0380: 3, L0757: 3, S0358: 2, S0222: 2, S0474: 2, S0422: 2, H0658: 2, H0436: 2, L0362: 2, S0242: 2, H0556: 1, H0717: 1, S6024: 1, H0484: 1, S0420: 1, L0005: 1, H0393: 1, L0717: 1, H0549: 1, L0623: 1, H0635: 1, H0052: 1, H0596: 1, S0025: 1, H0328: 1, H0622: 1, T0006: 1, H0272: 1, S0344:		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							1, S0426: 1, L0771: 1, L0774: 1, L0382: 1, L0809: 1, H0689: 1, H0684: 1, H0659: 1, H0648: 1, H0672: 1, H0518: 1, H0521: 1, S0027: 1, L0744: 1, L0754: 1, L0745: 1, L0747: 1, L0780: 1, L0753: 1, L0758: 1, L0759: 1, S0436: 1, L0592: 1, L0608: 1, S0026: 1, H0543: 1, H0423: 1 and H0422: 1.		
	HFPKB52	1307138	149	24 - 197	342				
	HFPKB52	1306234	150	3 - 365	343				
31	HGARX38	1306709	41	79 - 516	234	Arg-22 to Arg-37, Tyr-75 to Asp-82, Ser-98 to Trp-103, Gly-121 to Thr-126.	S0408: 1		
32	HMAGO59	1336115	42	100 - 381	235		H0521: 71, S0002: 23, H0522: 20, H0638: 9, H0641: 9, S0278: 7, L0659: 7, S0360: 5, S0426: 5, L0766: 4, L0748: 4, H0716: 3, S0344: 3, L0775: 3, L0666: 3, L0665: 3, H0662: 2, H0581: 2, S0144: 2, S0142: 2, L0770: 2, L0372: 2, L0764: 2, L0655: 2, L0663: 2, H0710: 2, S0406: 2, H0556: 1, L0785: 1, H0663: 1, S0442: 1, S0376: 1, S0408: 1, S0410:		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							1, S0474: 1, L0483: 1, H0644: 1, H0673: 1, S0440: 1, L0667: 1, L0646: 1, L0642: 1, L0648: 1, L0649: 1, L0805: 1, L0776: 1, L0607: 1, L0754: 1, L0777: 1, L0780: 1, L0731: 1, L0596: 1, L0599: 1 and L0604: 1.		
	HMAGO59	1307452	151	100 - 381	344	Tyr-54 to Pro-61, Arg-71 to Ala-77.	H0521: 71, S0002: 23, H0522: 20, H0638: 9, H0641: 9, S0278: 7, L0659: 7, S0360: 5, S0426: 5, L0766: 4, L0748: 4, H0716: 3, S0344: 3, L0775: 3, L0666: 3, L0665: 3, H0662: 2, H0581: 2, S0144: 2, S0142: 2, L0770: 2, L0372: 2, L0764: 2, L0655: 2, L0663: 2, H0710: 2, S0406: 2, H0556: 1, L0785: 1, H0663: 1, S0442: 1, S0376: 1, S0408: 1, S0410: 1, S0474: 1, L0483: 1, H0644: 1, H0673: 1, S0440: 1, L0667: 1, L0646: 1, L0642: 1, L0648: 1, L0649: 1, L0805: 1, L0776: 1, L0607: 1, L0754: 1, L0777: 1, L0780: 1, L0731: 1, L0596: 1, L0599: 1 and L0604: 1.		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
	HMAGO59	1307454	152	62 - 343	345	Tyr-54 to Pro-61, Arg-71 to Ala-77.			
	HMAGO59	1307450	153	129 - 272	346				
33	HMTSX03	1335783	43	23 - 1498	236		H0742: 2		
	HMTSX03	1305931	154	6 - 623	347	Arg-21 to Asn-28, Tyr-90 to Gly-98, Thr-143 to Glu-148, Glu-155 to Cys-164, Asn-185 to Asp-193.	H0742: 2		
34	HMTUZ60	1306331	44	45 - 389	237		H0742: 1		
35	HNFKC14	1306655	45	143 - 406	238	Leu-80 to Ser-88.	H0719: 1		
	HNFKC14	1306713	155	163 - 447	348	Leu-80 to Lys-95.			
36	HNSQN50	1322736	46	81 - 1577	239		S0408: 6, S0442: 3, L0748: 3, S0354: 2, S0444: 2, H0730: 1, H0036: 1, H0246: 1, H0059: 1, H0144: 1, S0374: 1, L0749: 1 and S0436: 1.		
	HNSQN50	1306007	156	109 - 1041	349	Ala-32 to Asn-37, Ala-89 to Glu-101, Gly-116 to Pro-126.	S0408: 6, S0442: 3, L0748: 3, S0354: 2, S0444: 2, H0730: 1, H0036: 1, H0246: 1, H0059: 1, H0144: 1, S0374: 1, L0749: 1 and S0436: 1.		
	HNSQN50	1306650	157	236 - 532	350	Glu-3 to Gly-17, Arg-37 to Pro-45, Pro-59 to Pro-64.			
37	HNSUM63	1306687	47	126 - 743	240	Gly-90 to Tyr-97, Ser-110 to Arg-117, Pro-139 to Leu-151,	L0774: 6, H0033: 1, H0424: 1, H0213: 1, H0401: 1, H0553: 1, L0804: 1, L0775:		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
						Pro-165 to Glu-173, Thr-186 to Cys-194.	1, L0776: 1, L0659: 1, L0519: 1, L0663: 1 and S0436: 1.		
	HNSUM63	1306714	158	142 - 759	351	Gly-90 to Tyr-97, Ser-110 to Arg-117, Pro-139 to Leu-151, Pro-165 to Glu-173, Thr-186 to Cys-194.			
38	HNSWV68	1306700	48	710 - 1300	241	Ala-25 to Ser-35, Cys-58 to Phe-63, Lys-83 to Trp-90, Pro-92 to Asn-99, Pro-101 to Phe-108, Pro-111 to Cys-119, Glu-186 to Ile-192.	L0770: 11, L0751: 9, L0769: 5, L0439: 5, H0144: 4, L0758: 4, S0436: 4, L0764: 3, L0766: 3, L0806: 3, L0740: 3, S0222: 2, S0010: 2, H0012: 2, H0031: 2, H0413: 2, L0662: 2, L0659: 2, L0665: 2, S0216: 2, L0438: 2, H0435: 2, S0206: 2, L0748: 2, L0747: 2, L0749: 2, L0757: 2, L0599: 2, H0556: 1, S0040: 1, S0418: 1, S0420: 1, S0442: 1, S0354: 1, H0730: 1, H0735: 1, H0747: 1, S0132: 1, L0717: 1, H0586: 1, H0632: 1, T0114: 1, H0250: 1, S0280: 1, H0744: 1, L0157: 1, H0014: 1, S0051: 1, S0003: 1, H0644: 1, H0038: 1, H0646: 1, S0002: 1, H0529: 1, L0369: 1, L0763: 1, L5565: 1, L0642: 1,	20pter-cen	

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							L0645: 1, L0768: 1, L0774: 1, L0807: 1, L0365: 1, L0647: 1, L5623: 1, L0666: 1, S0052: 1, L0565: 1, H0682: 1, H0658: 1, H0478: 1, S0037: 1, S3014: 1, L0754: 1, L0750: 1, L0759: 1, S0011: 1, S0192: 1 and H0352: 1.		
39	HOC2T95	1324137	49	172 - 675	242		S0408: 7, S0444: 6, S0358: 3, H0597: 2, S0442: 1, S0374: 1 and S0434: 1.		
	HOC2T95	1306715	159	65 - 568	352	Arg-22 to Arg-37, Val-76 to Asp-82, Ser-98 to Trp-103, Gly-121 to Thr-126.	S0408: 7, S0444: 6, S0358: 3, H0597: 2, S0442: 1, S0374: 1 and S0434: 1.		
40	HODNV05	1306656	50	86 - 352	243	Cys-49 to Phe-60, Leu-73 to Ser-79.	S0442: 1 and H0014: 1.		
	HODNV05	1306717	160	102 - 368	353	Cys-49 to Phe-60, Leu-73 to Ser-79.			
41	HPDSA48	1332325	51	45 - 137	244		L0809: 7, H0581: 3, L0658: 3, H0402: 2, L0769: 2, L0375: 2, L0783: 2, L0665: 2, S0052: 2, H0689: 2, H0648: 2, S0328: 2, H0696: 2, L0747: 2, H0657: 1, H0255: 1, H0741: 1, H0747: 1, L0717: 1, H0632: 1, H0486: 1, H0748: 1, H0231: 1, H0327: 1, H0545: 1, T0023: 1, T0086: 1, H0674:		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							1, H0316: 1, T0041: 1, L0764: 1, L0662: 1, L0768: 1, L0794: 1, L0803: 1, L0650: 1, L0805: 1, L0776: 1, L0629: 1, L0647: 1, L0790: 1, L0791: 1, L0666: 1, L0664: 1, S0330: 1, L0740: 1, L0751: 1, L0750: 1, L0777: 1, L0753: 1, L0755: 1, L0731: 1 and H0352: 1.		
	HPDSA48	1306302	161	78 - 431	354	Asp-31 to Phe-42, Ser-52 to Cys-58.	L0809: 7, H0581: 3, L0658: 3, H0402: 2, L0769: 2, L0375: 2, L0783: 2, L0665: 2, S0052: 2, H0689: 2, H0648: 2, S0328: 2, H0696: 2, L0747: 2, H0657: 1, H0255: 1, H0741: 1, H0747: 1, L0717: 1, H0632: 1, H0486: 1, H0748: 1, H0231: 1, H0327: 1, H0545: 1, T0023: 1, T0086: 1, H0674: 1, H0316: 1, T0041: 1, L0764: 1, L0662: 1, L0768: 1, L0794: 1, L0803: 1, L0650: 1, L0805: 1, L0776: 1, L0629: 1, L0647: 1, L0790: 1, L0791: 1, L0666: 1, L0664: 1, S0330: 1, L0740: 1, L0751: 1, L0750: 1, L0777: 1, L0753: 1,		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							L0755: 1, L0731: 1 and H0352: 1.		
	HPDSA48	1306617	162	78 - 431	355	Asp-31 to Phe-42, Ser-52 to Cys-58.			
42	HSKIT24	1320220	52	30 - 1631	245		L0747: 11, S0360: 5, H0551: 4, L0764: 4, L0783: 4, H0013: 3, L0770: 3, L0775: 3, L0438: 3, S0037: 3, L0779: 3, L0757: 3, L0599: 3, H0295: 2, S0003: 2, H0628: 2, L0369: 2, L0763: 2, L0772: 2, L0378: 2, L0509: 2, L0776: 2, L0666: 2, H0521: 2, S3014: 2, L0439: 2, L0755: 2, L0731: 2, S0436: 2, L0588: 2, L0601: 2, T0049: 1, H0656: 1, S0212: 1, H0638: 1, S0420: 1, S0408: 1, S0046: 1, S0476: 1, H0497: 1, L3816: 1, L3817: 1, H0486: 1, H0309: 1, H0544: 1, H0545: 1, H0024: 1, S0250: 1, H0644: 1, H0617: 1, H0038: 1, H0040: 1, S0294: 1, L0065: 1, H0633: 1, H0646: 1, S0144: 1, L0372: 1, L0648: 1, L0768: 1, L0649: 1, L0805: 1, L0654: 1, L0657: 1, L0513: 1, L0656: 1, L0659: 1, L0517:		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							1, L5623: 1, L4501: 1, L2261: 1, H0144: 1, L0352: 1, S0126: 1, H0690: 1, H0683: 1, H0658: 1, H0672: 1, H0539: 1, S0380: 1, H0528: 1, H0478: 1, H0631: 1, S3012: 1, L0749: 1, L0752: 1, L0758: 1, S0434: 1, H0665: 1, S0192: 1 and S0424: 1.		
	HSKIT24	1308800	163	20 - 607	356		L0747: 11, S0360: 5, H0551: 4, L0764: 4, L0783: 4, H0013: 3, L0770: 3, L0775: 3, L0438: 3, S0037: 3, L0779: 3, L0757: 3, L0599: 3, H0295: 2, S0003: 2, H0628: 2, L0369: 2, L0763: 2, L0772: 2, L0378: 2, L0509: 2, L0776: 2, L0666: 2, H0521: 2, S3014: 2, L0439: 2, L0755: 2, L0731: 2, S0436: 2, L0588: 2, L0601: 2, T0049: 1, H0656: 1, S0212: 1, H0638: 1, S0420: 1, S0408: 1, S0046: 1, S0476: 1, H0497: 1, L3816: 1, L3817: 1, H0486: 1, H0309: 1, H0544: 1, H0545: 1, H0024: 1, S0250: 1, H0644: 1, H0617: 1, H0038: 1, H0040: 1, S0294:		121050, 131400, 138040, 153455, 159000, 179095, 181460, 192974, 192974, 600807, 601596, 601692, 601692, 601692, 601692, 602089, 602121, 602460

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							1, L0065: 1, H0633: 1, H0646: 1, S0144: 1, L0372: 1, L0648: 1, L0768: 1, L0649: 1, L0805: 1, L0654: 1, L0657: 1, L0513: 1, L0656: 1, L0659: 1, L0517: 1, L5623: 1, L4501: 1, L2261: 1, H0144: 1, L0352: 1, S0126: 1, H0690: 1, H0683: 1, H0658: 1, H0672: 1, H0539: 1, S0380: 1, H0528: 1, H0478: 1, H0631: 1, S3012: 1, L0749: 1, L0752: 1, L0758: 1, S0434: 1, H0665: 1, S0192: 1 and S0424: 1.		
	HSKIT24	1308801	164	90 - 1460	357	Asp-141 to Pro-147, Arg-174 to Tyr-183, Gly-199 to Lys-206, Pro-238 to Gly-245, Leu-254 to Glu-267, Pro-285 to Tyr-290, Thr-302 to Arg-308, Tyr-313 to Ala-319, Lys-328 to Asp-334, Ser-385 to Asp-391.			
	HSKIT24	1308799	165	107 - 397	358	Gly-55 to Ala-64, Glu-82 to Phe-87.			
43	HSVAA83	1320217	53	102 - 839	246		H0521: 100, H0522: 33, H0445: 16, L0748: 15, S0360: 11, H0553: 7, H0575:		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							6, L0754: 6, S0434: 6, S0354: 4, H0638: 3, S0358: 3, H0427: 3, H0039: 3, H0622: 3, H0644: 3, H0090: 3, H0264: 3, S0438: 3, S0374: 3, L0743: 3, L0744: 3, L0747: 3, L0755: 3, S0436: 3, S0376: 2, S0408: 2, H0309: 2, H0009: 2, H0620: 2, H0376: 2, H0063: 2, L0769: 2, L0659: 2, H0658: 2, H0672: 2, H0555: 2, L0581: 2, H0713: 1, H0583: 1, L0418: 1, L0785: 1, S0212: 1, S0282: 1, H0661: 1, H0663: 1, L0005: 1, S0442: 1, H0619: 1, L3388: 1, S0280: 1, H0108: 1, H0122: 1, H0581: 1, H0597: 1, H0570: 1, H0123: 1, H0023: 1, H0014: 1, S0362: 1, H0510: 1, H0375: 1, H0252: 1, H0213: 1, H0031: 1, H0189: 1, H0163: 1, L0435: 1, S0440: 1, L0646: 1, L0765: 1, L0648: 1, L0768: 1, L0378: 1, L0805: 1, L0559: 1, L0789: 1, H0726: 1, L0352: 1, H0682: 1, H0666: 1, S0330: 1, S0378: 1, H0754: 1, H0710:		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							1, S0190: 1, S0406: 1, H0345: 1, L0439: 1, L0751: 1, L0749: 1, L0750: 1, L0779: 1, L0731: 1, L0759: 1, H0444: 1, H0343: 1, H0595: 1, S0106: 1, H0668: 1, S0384: 1, H0506: 1 and H0352: 1.		
	HSVAA83	1308894	166	94 - 633	359	Arg-25 to Gly-31, Pro-45 to Gly-52, Pro-71 to Gly-76, Pro-81 to Gly-91, Glu-107 to Phe-118.	H0521: 100, H0522: 33, H0445: 16, L0748: 15, S0360: 11, H0553: 7, H0575: 6, L0754: 6, S0434: 6, S0354: 4, H0638: 3, S0358: 3, H0427: 3, H0039: 3, H0622: 3, H0644: 3, H0090: 3, H0264: 3, S0438: 3, S0374: 3, L0743: 3, L0744: 3, L0747: 3, L0755: 3, S0436: 3, S0376: 2, S0408: 2, H0309: 2, H0009: 2, H0620: 2, H0376: 2, H0063: 2, L0769: 2, L0659: 2, H0658: 2, H0672: 2, H0555: 2, L0581: 2, H0713: 1, H0583: 1, L0418: 1, L0785: 1, S0212: 1, S0282: 1, H0661: 1, H0663: 1, L0005: 1, S0442: 1, H0619: 1, L3388: 1, S0280: 1, H0108: 1, H0122: 1, H0581: 1, H0597: 1, H0570: 1, H0123: 1,		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							H0023: 1, H0014: 1, S0362: 1, H0510: 1, H0375: 1, H0252: 1, H0213: 1, H0031: 1, H0189: 1, H0163: 1, L0435: 1, S0440: 1, L0646: 1, L0765: 1, L0648: 1, L0768: 1, L0378: 1, L0805: 1, L0559: 1, L0789: 1, H0726: 1, L0352: 1, H0682: 1, H0666: 1, S0330: 1, S0378: 1, H0754: 1, H0710: 1, S0190: 1, S0406: 1, H0345: 1, L0439: 1, L0751: 1, L0749: 1, L0750: 1, L0779: 1, L0731: 1, L0759: 1, H0444: 1, H0343: 1, H0595: 1, S0106: 1, H0668: 1, S0384: 1, H0506: 1 and H0352: 1.		
	HSVAA83	1313494	167	119 - 457	360	Arg-25 to Gly-31, Pro-45 to Gly-52, Pro-71 to Gly-76, Pro-81 to Gly-91, Glu-107 to Phe-118.			
	HSVAA83	1313491	168	119 - 856	361	Arg-25 to Gly-31, Pro-45 to Gly-52, Pro-71 to Gly-76, Pro-81 to Gly-91, Glu-107 to Phe-118.			
	HSVAA83	1313490	169	118 - 855	362	Arg-25 to Gly-31, Pro-45 to Gly-52,			

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
						Pro-71 to Gly-76, Pro-81 to Gly-91, Glu-107 to Phe-118.			
44	HUTJT76	1322752	54	31 - 954	247		S0358: 8, H0457: 6, L0777: 6, S0436: 6, L0748: 5, H0156: 4, L0776: 4, L0439: 4, H0341: 3, S0418: 3, S0142: 3, L0758: 3, H0685: 2, S0420: 2, S0046: 2, H0370: 2, H0545: 2, H0012: 2, H0617: 2, H0264: 2, H0494: 2, L0769: 2, L0766: 2, L0775: 2, H0660: 2, H0539: 2, L0747: 2, L0731: 2, L0596: 2, H0422: 2, H0506: 2, H0265: 1, H0556: 1, H0140: 1, H0661: 1, H0662: 1, H0638: 1, S0356: 1, S0444: 1, S0410: 1, H0729: 1, H0722: 1, H0728: 1, H0393: 1, S0278: 1, H0549: 1, H0231: 1, L0738: 1, H0081: 1, L0471: 1, H0620: 1, S0051: 1, H0083: 1, H0594: 1, H0031: 1, H0181: 1, H0673: 1, H0135: 1, H0038: 1, H0551: 1, S0440: 1, S0150: 1, S0422: 1, L0763: 1, L0372: 1, L0800: 1, L0553: 1, L0773: 1, L0768: 1, L0774: 1, L0805:		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							1, L0655: 1, L0518: 1, L0783: 1, L0809: 1, L0519: 1, L2260: 1, S0374: 1, H0593: 1, H0690: 1, H0666: 1, S0392: 1, L0750: 1, L0759: 1, S0434: 1 and H0543: 1.		
	HUTJT76	1307189	170	14 - 424	363	Gly-56 to Asp-67, Tyr-118 to Pro-127.	S0358: 8, H0457: 6, L0777: 6, S0436: 6, L0748: 5, H0156: 4, L0776: 4, L0439: 4, H0341: 3, S0418: 3, S0142: 3, L0758: 3, H0685: 2, S0420: 2, S0046: 2, H0370: 2, H0545: 2, H0012: 2, H0617: 2, H0264: 2, H0494: 2, L0769: 2, L0766: 2, L0775: 2, H0660: 2, H0539: 2, L0747: 2, L0731: 2, L0596: 2, H0422: 2, H0506: 2, H0265: 1, H0556: 1, H0140: 1, H0661: 1, H0662: 1, H0638: 1, S0356: 1, S0444: 1, S0410: 1, H0729: 1, H0722: 1, H0728: 1, H0393: 1, S0278: 1, H0549: 1, H0231: 1, L0738: 1, H0081: 1, L0471: 1, H0620: 1, S0051: 1, H0083: 1, H0594: 1, H0031: 1, H0181: 1, H0673: 1, H0135: 1, H0038: 1, H0551: 1,		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							S0440: 1, S0150: 1, S0422: 1, L0763: 1, L0372: 1, L0800: 1, L0553: 1, L0773: 1, L0768: 1, L0774: 1, L0805: 1, L0655: 1, L0518: 1, L0783: 1, L0809: 1, L0519: 1, L2260: 1, S0374: 1, H0593: 1, H0690: 1, H0666: 1, S0392: 1, L0750: 1, L0759: 1, S0434: 1 and H0543: 1.		
	HUTJT76	1313865	171	14 - 937	364	Gly-56 to Asp-67, Tyr-118 to Pro-127, Pro-136 to Asp-142, Pro-162 to Pro-168, Gly-213 to Pro-218, Ala-262 to Ala-267, Phe-270 to Gly-278, Pro-296 to Glu-301			
45	HUVHZ75	1336588	55	109 - 237	248		H0623: 1		
	HUVHZ75	1307428	172	199 - 369	365	Ser-36 to Arg-44, Ile-46 to Pro-52.	H0623: 1		
46	HVAQO59	1318530	56	67 - 747	249		H0478: 16, S0330: 14, S0392: 9, S0328: 8, H0032: 4, S0044: 3, H0402: 2, H0479: 2, H0263: 1, H0011: 1, H0096: 1, H0708: 1, S0464: 1, S0150: 1, H0517: 1, H0593: 1, H0670: 1, S0380: 1, H0448: 1, S0434: 1 and H0542: 1.		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
	HVAQO59	1293499	173	96 - 260	366	Pro-5 to Val-12, Pro-33 to Val-43.	H0478: 16, S0330: 14, S0392: 9, S0328: 8, H0032: 4, S0044: 3, H0402: 2, H0479: 2, H0263: 1, H0011: 1, H0096: 1, H0708: 1, S0464: 1, S0150: 1, H0517: 1, H0593: 1, H0670: 1, S0380: 1, H0448: 1, S0434: 1 and H0542: 1.		
47	HWHPA16	1306589	57	26 - 283	250	Pro-28 to Glu-35, Ala-80 to Gln-85.	H0587: 3, L0747: 2, L0376: 1 and S0330: 1.		
	HWHPA16	1307291	174	20 - 277	367	Pro-28 to Glu-35, Ala-80 to Gln-85.			
48	HYCAD48	1334177	58	70 - 1074	251		H0704: 2 and L0362: 2.		
	HYCAD48	1305993	175	59 - 1063	368	Gln-31 to Trp-47, His-62 to Gln-70, Met-83 to Phe-88, Asn-93 to Arg-104, Val-118 to Gly-124, Val-129 to Gly-136, Ser-170 to Asn-179, Pro-203 to Lys-212, Pro-267 to Asn-273, Tyr-285 to Lys-294, Lys-316 to Cys-322.	H0704: 2 and L0362: 2.		
49	HHFZF42	1305981	59	188 - 475	252		S0140: 11, H0549: 3, S0474: 3, L0493: 3, S0436: 3, H0624: 2, H0662: 2, S0418: 2, S0278: 2, H0427: 2, H0050: 2, L0471: 2, H0622: 2, L0770: 2, L0662: 2,		141750, 141800, 141800, 141800, 141800, 141850, 141850, 141850, 141850, 141850, 156850, 186580,

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							L0794: 2, L0809: 2, L0748: 2, L0779: 2, L0731: 2, H0170: 1, H0717: 1, H0650: 1, H0656: 1, S0001: 1, S0360: 1, H0580: 1, L0717: 1, H0586: 1, L0623: 1, T0039: 1, H0599: 1, H0575: 1, H0706: 1, H0597: 1, H0546: 1, H0123: 1, H0620: 1, H0179: 1, H0271: 1, H0687: 1, H0286: 1, H0252: 1, H0615: 1, H0428: 1, H0628: 1, H0063: 1, H0647: 1, H0649: 1, H0652: 1, L0773: 1, L0364: 1, L0775: 1, L0378: 1, L0659: 1, L0526: 1, L5622: 1, L0663: 1, L2654: 1, S0126: 1, H0689: 1, H0670: 1, H0521: 1, S0406: 1, H0555: 1, S3012: 1, S0037: 1, S3014: 1, S0027: 1, S0032: 1, L0747: 1, L0592: 1, L0593: 1, H0542: 1 and H0677: 1.		191092, 600140, 600273, 601313, 601785
	HHFZF42	1309154	176	1 - 264	369				
50	HHAQY41	1306357	60	217 - 465	253	Glu-31 to Gln-41, Gly-47 to Leu-56.	S0422: 2		
	HHAQY41	1306666	177	119 - 367	370	Glu-31 to Gln-41, Gly-47 to Leu-56.			
51	HNSRC60	1323801	61	174 - 827	254		L0740: 4, H0624: 2, S0212: 2, H0046: 2, H0615: 2,		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							H0538: 2, L0794: 2, L3388: 1, H0586: 1, H0486: 1, H0013: 1, H0156: 1, H0024: 1, S6028: 1, H0271: 1, L0456: 1, H0488: 1, T0041: 1, T0042: 1, S0422: 1, S0426: 1, H0529: 1, L0369: 1, L0649: 1, L5623: 1, H0520: 1, H0696: 1, H0436: 1, L0748: 1, L0777: 1, L0752: 1, L0759: 1, S0436: 1, S0196: 1 and S0424: 1.		
	HNSRC60	1306009	178	158 - 568	371		L0740: 4, H0624: 2, S0212: 2, H0046: 2, H0615: 2, H0538: 2, L0794: 2, L3388: 1, H0586: 1, H0486: 1, H0013: 1, H0156: 1, H0024: 1, S6028: 1, H0271: 1, L0456: 1, H0488: 1, T0041: 1, T0042: 1, S0422: 1, S0426: 1, H0529: 1, L0369: 1, L0649: 1, L5623: 1, H0520: 1, H0696: 1, H0436: 1, L0748: 1, L0777: 1, L0752: 1, L0759: 1, S0436: 1, S0196: 1 and S0424: 1.		
	HNSRC60	1306672	179	2161 - 2394	372	Pro-8 to Pro-14, Pro-19 to Leu-29, Arg-52 to Ala-60.			
52	HFDUT84	1315930	62	92 - 415	255		H0294: 1, S0110: 1, H0733: 1, S0132: 1, T0040: 1,		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							H0183: 1, H0050: 1, H0030: 1, L0065: 1, L0807: 1, L0657: 1, L3811: 1, S0152: 1, S0406: 1 and L0747: 1.		
	HFDUT84	1305969	180	331 - 654	373	Pro-52 to Gln-59, Pro-61 to Ala-68, Thr-84 to Ala-106.	H0294: 1, S0110: 1, H0733: 1, S0132: 1, T0040: 1, H0183: 1, H0050: 1, H0030: 1, L0065: 1, L0807: 1, L0657: 1, L3811: 1, S0152: 1, S0406: 1 and L0747: 1.	10cen-q26.11	
53	HHA1S21	1335782	63	111 - 551	256		L0777: 2 and S0422: 1.		
	HHA1S21	1305929	181	94 - 534	374				
54	HHMQL78	1315932	64	139 - 756	257		S0410: 2, H0556: 1, H0024: 1, L0803: 1, L0806: 1, L5622: 1 and L0790: 1.		
	HHMQL78	1305936	182	538 - 1155	375	Pro-71 to Asp-82, Thr-164 to Arg-172.	S0410: 2, H0556: 1, H0024: 1, L0803: 1, L0806: 1, L5622: 1 and L0790: 1.		
55	HNSMZ53	1315502	65	52 - 513	258		S0436: 1		
	HNSMZ53	1306010	183	52 - 426	376	Pro-3 to Arg-8.	S0436: 1		
56	HNGMJ63	1323768	66	40 - 339	259		S0428: 1 and H0543: 1.		
	HNGMJ63	1306153	184	33 - 332	377		S0428: 1 and H0543: 1.		
57	HNSIT44	1315491	67	124 - 639	260		S0434: 1		
	HNSIT44	1306002	185	124 - 528	378	Pro-50 to Arg-56, Gly-64 to Gly-72, Pro-110 to Arg-118, Pro-126 to Gly-133.	S0434: 1		
58	HHMSF21	1306648	68	135 - 383	261	Gln-40 to Glu-48, Glu-66 to Cys-71.	S0410: 1		
	HHMSF21	1306711	186	152 - 400	379	Gln-40 to Glu-48,			

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
						Glu-66 to Cys-71.			
59	HNSES94	1306632	69	271 - 579	262	His-48 to His-53, Pro-65 to Gly-71, Pro-91 to Arg-103.	L0764: 5, L0771: 5, L0374: 3, S0434: 3, H0506: 3, S0356: 1, S0410: 1, H0264: 1, L0372: 1, L0783: 1, L0532: 1 and L0663: 1.		
	HNSES94	1306633	187	152 - 1261	380	Gln-10 to Thr-18, Asn-132 to Tyr-137.			
60	HH1MU43	1335781	70	30 - 332	263		S0422: 2, L0646: 2 and H0156: 1.		
	HH1MU43	1305889	188	12 - 314	381	Val-24 to Asp-40, Asn-62 to Leu-73, Tyr-87 to Ser-93.	S0422: 2, L0646: 2 and H0156: 1.		
	HH1MU43	1306229	189	439 - 615	382				
61	HHMNV67	1335553	71	233 - 685	264		S0410: 1		
	HHMNV67	1306594	190	70 - 525	383	Trp-35 to Trp-45, Pro-52 to Asp-57, Thr-73 to Arg-82, Pro-105 to Leu-112, Pro-115 to Arg-127, Pro-140 to Ile-147.	S0410: 26, S0444: 6, S0358: 4, S0440: 4, L0748: 4, H0661: 3, S0442: 3, S0408: 3, H0393: 3, H0574: 3, S0438: 3, S0406: 3, S0360: 2, H0510: 2, H0509: 2, L0764: 2, S0374: 2, H0742: 1, H0730: 1, H0722: 1, H0331: 1, H0204: 1, H0150: 1, H0615: 1, H0059: 1, L0772: 1, L0648: 1, L0803: 1, L0774: 1 and L0791: 1.		
	HHMNV67	1309728	191	233 - 688	384	Trp-35 to Trp-45, Pro-52 to Asp-57, Thr-73 to Arg-82,			

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
						Pro-105 to Leu-112, Pro-115 to Arg-127, Pro-140 to Gln-151			
62	HMTSU69	1335548	72	112 - 540	265		H0742: 1		
	HMTSU69	1306694	192	17 - 445	385	Trp-35 to Trp-45, Pro-52 to Asp-57, Thr-73 to Thr-80, Pro-96 to Leu-103, Pro-106 to Arg-118, Pro-131 to Gln-142.	H0742: 1		
	HMTSU69	1307250	193	6 - 434	386	Trp-35 to Trp-45, Pro-52 to Asp-57, Thr-73 to Thr-80, Pro-96 to Leu-103, Pro-106 to Arg-118, Pro-131 to Gln-142.			
63	HMWCU24	1318364	73	148 - 1500	266		H0617: 6, L0771: 5, L0740: 4, L0747: 3, H0265: 2, S0358: 2, S0476: 2, H0620: 2, H0040: 2, L0659: 2, L0809: 2, H0547: 2, L0748: 2, L0751: 2, L0754: 2, L0589: 2, H0295: 1, T0049: 1, H0657: 1, H0341: 1, H0661: 1, S0442: 1, S0360: 1, S0045: 1, S0132: 1, T0103: 1, S0050: 1, H0594: 1, H0266: 1, H0290: 1, L0455: 1, H0038: 1, H0280: 1, H0641: 1, S0002: 1, L0763: 1, L0371: 1, L0764: 1,		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							L0766: 1, L0774: 1, L0805: 1, L0542: 1, L0783: 1, L0665: 1, H0520: 1, S0126: 1, H0684: 1, H0435: 1, S0380: 1, H0521: 1, H0436: 1, S0028: 1, L0742: 1, H0445: 1, L0590: 1, S0192: 1, H0542: 1, H0543: 1 and H0423: 1.		
	HMWCU24	1308840	194	140 - 541	387	Arg-23 to Ser-34.	H0617: 6, L0771: 5, L0740: 4, L0747: 3, H0265: 2, S0358: 2, S0476: 2, H0620: 2, H0040: 2, L0659: 2, L0809: 2, H0547: 2, L0748: 2, L0751: 2, L0754: 2, L0589: 2, H0295: 1, T0049: 1, H0657: 1, H0341: 1, H0661: 1, S0442: 1, S0360: 1, S0045: 1, S0132: 1, T0103: 1, S0050: 1, H0594: 1, H0266: 1, H0290: 1, L0455: 1, H0038: 1, H0280: 1, H0641: 1, S0002: 1, L0763: 1, L0371: 1, L0764: 1, L0766: 1, L0774: 1, L0805: 1, L0542: 1, L0783: 1, L0665: 1, H0520: 1, S0126: 1, H0684: 1, H0435: 1, S0380: 1, H0521: 1, H0436: 1, S0028: 1, L0742: 1, H0445: 1, L0590: 1, S0192:		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							1, H0542: 1, H0543: 1 and H0423: 1.		
	HMWCU24	1308844	195	176 - 1528	388	Arg-23 to Ser-34, Asn-221 to Phe-232, Thr-303 to His-308, Ser-334 to Pro-340, Asp-398 to Asn-407, Pro-439 to Ala-447.			
	HMWCU24	1308839	196	1 - 375	389	Ser-9 to Pro-15, Asp-73 to Asn-82, Pro-114 to Ala-122.			
64	HCPCI91	1323889	74	401 - 1201	267	Thr-187 to Lys-192, Asn-255 to Leu-262.			
65	HDMSA08	1322805	75	591 - 1028	268	His-46 to Gly-52, Arg-88 to Gln-100.	H0424: 5, L0748: 4, L0439: 4, H0733: 3, H0734: 3, L0794: 3, L0803: 3, L0777: 3, H0556: 2, H0645: 2, H0550: 2, H0597: 2, H0545: 2, H0687: 2, L0769: 2, L0809: 2, L0789: 2, L0666: 2, L0438: 2, H0521: 2, L0744: 2, L0740: 2, L0758: 2, S0031: 2, H0265: 1, H0685: 1, S0218: 1, H0657: 1, H0656: 1, H0728: 1, S0132: 1, S0476: 1, L0021: 1, S0010: 1, H0007: 1, H0052: 1, H0150: 1, H0050: 1, H0014: 1, H0416: 1, H0188: 1, H0213: 1, H0405: 1, H0418: 1, H0674: 1, S0366:		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							1, T0067: 1, H0413: 1, S0142: 1, L0369: 1, L0796: 1, L0388: 1, L0774: 1, L0776: 1, L0783: 1, L5623: 1, L0790: 1, H0519: 1, H0539: 1, S0013: 1, H0704: 1, H0478: 1, S0027: 1, L0743: 1, L0749: 1, L0780: 1, L0731: 1, L0588: 1 and H0352: 1.		
66	HCPBA16	1319147	76	134 - 922	269	Gln-55 to Asp-60, Arg-102 to Lys-108, Asp-142 to Thr-147, Tyr-187 to Asp-201, Lys-254 to Ala-263.	L0744: 7, H0575: 4, H0081: 4, S0028: 3, H0717: 2, H0013: 2, H0309: 2, L0521: 2, L0662: 2, L0375: 2, L5622: 2, H0144: 2, S0374: 2, H0689: 2, S0378: 2, L0743: 2, L0777: 2, L0731: 2, H0716: 1, L0459: 1, H0255: 1, S0442: 1, H0645: 1, H0411: 1, H0549: 1, H0592: 1, H0486: 1, H0427: 1, H0253: 1, H0085: 1, H0050: 1, H0082: 1, H0188: 1, H0428: 1, H0553: 1, H0038: 1, L0768: 1, L0659: 1, L0647: 1, L0789: 1, L0790: 1, L0666: 1, S0330: 1, H0754: 1, L0740: 1, L0750: 1, S0434: 1 and H0506: 1.		
67	HCPBM77	1324637	77	52 - 2901	270	Gly-31 to Arg-36,			

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
						Thr-55 to Glu-62, Ser-64 to Ser-79, Arg-87 to Asp-96, Arg-103 to Ala-109, Asp-120 to Arg-126.			
68	HCPBR37	1319172	78	144 - 527	271	Gln-76 to Glu-85, Pro-103 to Gln-113.	L0758: 2 and H0754: 1.		
	HCPBR37	1319221	197	2 - 226	390	Val-2 to Val-7, Pro-10 to Thr-16, Asn-18 to Gly-27, Glu-35 to Glu-44.			
69	HIEAG70	1319141	79	29 - 313	272		H0757: 1		
70	HDMTL77	1319253	80	316 - 1254	273	Asp-43 to Gly-49, Asp-109 to Gln-116, Ser-128 to Arg-135, Glu-196 to Val-201, Lys-281 to Ala-289.	H0734: 4, L0471: 3, H0624: 2, H0728: 1, H0735: 1, H0733: 1, L0622: 1, H0599: 1, H0196: 1, L0662: 1, L0747: 1, L0759: 1 and L0604: 1.	17q21.1	109270, 109270, 109270, 109270, 109270, 109270, 109270, 148065, 148080, 148080, 148080, 154275, 157140, 157140, 157140, 157140, 157140, 157140, 168860, 171190, 221820, 600119, 600119, 600119, 601550, 601551, 601844
71	HDMTP20	1322795	81	338 - 1051	274	Ala-49 to Pro-57, Arg-77 to Val-83, Tyr-91 to Ala-98, Arg-121 to Gly-126, Glu-204 to Asp-212,	H0056: 7, L0748: 6, L0754: 6, L0731: 6, L0769: 5, L0776: 4, S0436: 4, L0596: 4, T0049: 3, S0344: 3, L0805: 3, L0659: 3, S0126:		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
						Glu-230 to Thr-237.	3, S0328: 3, S0442: 2, H0734: 2, S0045: 2, H0544: 2, H0620: 2, H0031: 2, H0553: 2, H0551: 2, H0494: 2, L0768: 2, L0794: 2, H0521: 2, L0743: 2, L0439: 2, L0750: 2, L0756: 2, S0031: 2, S0192: 2, L0615: 1, S0040: 1, H0341: 1, S0212: 1, S0001: 1, H0484: 1, H0661: 1, S0360: 1, S0132: 1, H0619: 1, H0393: 1, L2255: 1, S0278: 1, L3817: 1, H0643: 1, T0039: 1, T0109: 1, H0013: 1, H0244: 1, L0021: 1, H0097: 1, H0599: 1, S0010: 1, H0318: 1, H0050: 1, L0471: 1, H0024: 1, S0050: 1, H0375: 1, S0003: 1, L0483: 1, H0644: 1, H0628: 1, H0032: 1, L0455: 1, H0124: 1, H0316: 1, H0163: 1, H0090: 1, H0560: 1, H0647: 1, H0646: 1, S0142: 1, L0770: 1, L0773: 1, L0648: 1, L0662: 1, L0766: 1, L0649: 1, L0803: 1, L0775: 1, L0806: 1, L0653: 1, L5623: 1, L0787: 1, L0665: 1, H0539: 1, S0152: 1, H0479:		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							1, S0037: 1, S3014: 1, S0027: 1, S0206: 1, L0779: 1, L0752: 1, L0755: 1, L0757: 1, L0758: 1, L0759: 1, H0595: 1, S0434: 1, S0011: 1, S0194: 1, H0423: 1 and H0506: 1.		
	HDMTP20	1322798	198	30 - 992	391	Glu-47 to Asp-55, His-200 to His-206, Asp-261 to Arg-267, Asp-308 to Arg-315.			
72	HIEAP38	1319194	82	278 - 592	275		L0742: 18, L0744: 15, L0751: 8, L0743: 6, L0766: 5, L0745: 5, L0750: 5, H0585: 4, H0052: 4, L0770: 4, L0806: 4, L0731: 4, S0358: 3, H0580: 3, S0007: 3, H0581: 3, H0194: 3, H0620: 3, T0010: 3, L0769: 3, L3905: 3, L0761: 3, H0521: 3, L0747: 3, L0749: 3, H0141: 2, S0040: 2, L0717: 2, H0550: 2, H0036: 2, H0024: 2, S0438: 2, H0132: 2, L0772: 2, L0764: 2, L0775: 2, L0783: 2, L0790: 2, L0666: 2, L0665: 2, L3827: 2, L0439: 2, L0777: 2, L0752: 2, L0757: 2, H0484: 1, H0662: 1, H0125: 1, L0617: 1, S0360:		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							1, H0730: 1, H0747: 1, H0749: 1, H0261: 1, H0549: 1, S0222: 1, H0438: 1, H0587: 1, H0497: 1, H0333: 1, H0599: 1, H0042: 1, H0590: 1, H0618: 1, H0253: 1, H0327: 1, H0123: 1, H0050: 1, H0012: 1, H0201: 1, H0083: 1, H0179: 1, H0687: 1, H0288: 1, H0622: 1, H0031: 1, H0628: 1, S0036: 1, H0135: 1, H0087: 1, H0551: 1, H0488: 1, S0038: 1, L0351: 1, H0494: 1, H0652: 1, L3818: 1, H0538: 1, L0640: 1, L0763: 1, L4747: 1, L0796: 1, L5566: 1, L0641: 1, L0643: 1, L0648: 1, L0768: 1, L0794: 1, L0803: 1, L0651: 1, L0807: 1, L5622: 1, L0787: 1, L0788: 1, S0428: 1, H0757: 1, H0547: 1, H0659: 1, H0658: 1, H0672: 1, S0330: 1, S0152: 1, H0522: 1, H0696: 1, S0406: 1, S0037: 1, L0754: 1, L0746: 1, L0779: 1, L0780: 1, L0758: 1, L0759: 1, H0445: 1, S0436: 1, L0596: 1, L0595: 1, H0423: 1,		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
	HIEAP38	1319262	199	509 - 1855	392	Ser-33 to Ala-40, Gln-42 to Asn-48, Glu-67 to Leu-83, Gly-93 to Leu-98, Glu-154 to Ser-160, Glu-211 to Cys-226, Arg-271 to Ile-278, Asp-299 to Phe-305, Ser-315 to Gly-321, His-324 to Tyr-332, Tyr-337 to Tyr-350.	S0424: 1 and H0352: 1.		
73	HIEBT86	1322715	83	296 - 544	276		H0757: 1		
74	HIGAN47	1319301	84	33 - 578	277		H0764: 1	4p16.3	102680, 134934, 134934, 134934, 134934, 134934, 134934, 134934, 143100, 180072, 180072, 194190, 252800, 252800, 252800, 602104, 605841
75	HDMSW74	1319286	85	244 - 516	278	Ala-3 to Lys-9, Gln-65 to Asp-75, Leu-83 to Ala-89.	H0271: 32, S0052: 7, H0713: 6, S0360: 6, L0623: 6, H0416: 6, L2260: 6, H0716: 5, H0510: 5, H0717: 4, H0734: 4, H0427: 4, S0132: 3, H0250: 3, H0069: 3, S0474: 3, H0581: 3, H0179: 3, H0518: 3, S0027: 3, H0624: 2, S0476: 2,		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							H0632: 2, H0309: 2, H0038: 2, H0646: 2, L0643: 2, L0649: 2, S0428: 2, S0053: 2, S3014: 2, L0601: 2, H0668: 2, S0242: 2, S0196: 2, H0171: 1, L3643: 1, L3644: 1, H0657: 1, S0116: 1, S0001: 1, S0408: 1, H0742: 1, H0770: 1, L3388: 1, S0278: 1, H0549: 1, H0550: 1, S0222: 1, H0431: 1, H0592: 1, H0331: 1, L3653: 1, T0060: 1, S0280: 1, H0081: 1, H0024: 1, H0355: 1, H0375: 1, H0719: 1, H0687: 1, H0428: 1, H0039: 1, H0604: 1, H0644: 1, H0383: 1, H0063: 1, H0494: 1, H0649: 1, S0426: 1, L0763: 1, L0667: 1, L0774: 1, L0629: 1, H0659: 1, H0672: 1, H0727: 1, S3012: 1, S0436: 1, L0604: 1, L0361: 1, H0653: 1 and H0775: 1.		
76	HIGBG18	1324325	86	71 - 724	279		S0378: 3, S0380: 3, H0764: 2, H0766: 2 and L4558: 1.		
77	HDMTE62	1319302	87	90 - 359	280	Leu-63 to Arg-68.	L0748: 8, S0126: 7, L0471: 6, H0619: 4, H0486: 4, S0192: 4, H0717: 3, S0116: 3, S0358: 3, H0369: 3,		

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							H0123: 3, H0012: 3, H0713: 2, H0645: 2, H0574: 2, H0590: 2, H0328: 2, L0794: 2, L5622: 2, L0747: 2, L0759: 2, H0624: 1, H0170: 1, H0716: 1, H0583: 1, S0442: 1, S0360: 1, S0408: 1, H0733: 1, H0734: 1, H0411: 1, H0549: 1, L3655: 1, H0244: 1, H0427: 1, H0575: 1, T0071: 1, H0309: 1, H0544: 1, H0024: 1, H0032: 1, H0038: 1, H0616: 1, H0488: 1, T0004: 1, H0561: 1, S0352: 1, L0776: 1, S0052: 1, H0725: 1, H0723: 1, H0519: 1, H0689: 1, H0651: 1, S0330: 1, H0752: 1, S0432: 1, L0439: 1, L0749: 1, L0756: 1, L0731: 1, S0436: 1, S0194: 1, S0196: 1, S0458: 1 and S0384: 1.		
	HDMTE62	1319303	200	187 - 372	393	Ser-1 to Gln-14.			
78	HCPRA19	1324733	88	52 - 750	281	Val-125 to Pro-131, Gln-133 to Thr-141, Asp-208 to Phe-216.	L2570: 23, L3388: 12, S0440: 12, L0666: 8, S0422: 7, L0665: 7, L2513: 6, L0662: 6, H0521: 6, L0439: 6, L0754: 6, L0756: 6, H0551: 5, L3832: 5, H0657: 4, S0358: 4, S0360: 4, H0013: 4, L0766: 4, L2884:	13q32.3	601837, 601837, 606258

Gene No:	cDNA Clone ID	Contig ID:	SEQ ID NO: X	ORF (From-To)	AA SEQ ID NO: Y	Predicted Epitopes	Tissue Distribution Library code: count (see Table IV for Library Codes)	Cytologic Band	OMIM Disease Reference(s):
							3, H0580: 3, H0771: 3, L3817: 3, H0791: 3, H0581: 3, H0150: 3, H0674: 3, L0805: 3, L0776: 3, L0664: 3, H0539: 3, S0406: 3, H0782: 2, H0583: 2, L2995: 2, L2282: 2, S0418: 2, S0420: 2, S0442: 2, S0408: 2, S0007: 2, H0747: 2, L2788: 2, L2789: 2, H0351: 2, H0441: 2, L3816: 2, H0486: 2, H0156: 2, H0098: 2, H0590: 2, H0004: 2, L0471: 2, H0328: 2, H0030: 2, H0494: 2, L3181: 2, L5152: 2, L0646: 2, L0771: 2, L0649: 2, L0774: 2, L0657: 2, L6427: 2, L5623: 2, L2260: 2, L0565: 2, L3827: 2, H0547: 2, H0648: 2, S0330: 2, S0380: 2, S0152: 2, H0522: 2, H0555: 2, H0478: 2, L0750: 2, L0777: 2, H0445: 2, S0436: 2, L0362: 2, S0192: 2, H0543: 2, L3839: 2, H0624: 1, H0170: 1, H0556: 1, L3643: 1, S0342: 1, H0294: 1, H0656: 1, S0116: 1, H0341: 1, S0212: 1, H0662: 1, H0761: 1, H0450: 1, H0638: 1,		